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In this issue

- American Family Physician
- Cardiology
- Community Medicine
- Dermatology
- ENT
- Internal Medicine
- Obstetrics and Gynecology
- Algorithm
- Expert View
- Medicolegal
- HCFI Legal Cell
- Medifinance
- Conference Proceedings
- Around the Globe
- Spiritual Update
- Inspirational Story
- Lighter Reading

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FROM THE DESK OF THE GROUP EDITOR-IN-CHIEF

705 Revisiting 2018: A Roundup of Top Health Stories in India
KK Aggarwal

AMERICAN FAMILY PHYSICIAN

710 Autism Spectrum Disorder: Primary Care Principles
Kristian E. Sanchack, Craig A. Thomas

717 Practice Guidelines

718 Photo Quiz

CARDIOLOGY

720 Pseudo-Ventricular Tachycardia in Parkinson's Disease
Monika Maheshwari, Sonam

COMMUNITY MEDICINE

722 Validation of Postnatal Care Health Data Reported Under Health Management Information System by the Primary Health Centers of Rural Vadodara, Gujarat
Sangita V Patel, Harsh Bakshi, Dhara Zalavadiya, Prakash Kotecha

732 Micronutrient Bridge in Infectious Diseases and Its Immunological Role
Shanmugam A

DERMATOLOGY

736 Erythroderma: Epidemiology, Clinical Profile and Clinicopathological Correlation in 47 Patients
US Agarwal, Anshul Maheshwari, Sunil Kothiwala, Karuna Gupta, Arpita Jindal

ENT

742 Comparing the Incidence of Hearing Impairment in Normal to High-risk Newborns
MV Subba Rao, BJ Prasad, Maheshwar Reddy

INTERNAL MEDICINE

746 Association Between Statin Therapy and Diabetes Risk
Mukesh Mehra

OBSTETRICS AND GYNECOLOGY

754 A Study of Antepartum Cardiotocography in Mothers with Reduced Fetal Movement at Term and Its Correlation with Fetal Outcome
Monalisa Neogi, Tapan Kumar Lahiri, Bandana Biswas, Tarasankar Bag, Pallab Kumar Mistri, Avishek Bhadra

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ALGORITHM

759 Management of Severe Asymptomatic Hypertension

EXPERT VIEW

760 How Important a Risk Factor is Systolic Blood Pressure?

KK Aggarwal

MEDICOLEGAL

764 Important Health-related Judgments of the Year 2018

KK Aggarwal, Ira Gupta

HCFI LEGAL CELL

770 Activities of Heart Care Foundation of India Legal Cell in 2018

MEDIFINANCE

773 Financial Tips for Doctors

CONFERENCE PROCEEDINGS

775 IANCON 2018: 26th Annual National Conference of Indian Academy of Neurology

AROUND THE GLOBE

783 News and Views

SPIRITUAL UPDATE

791 Importance of Silence

KK Aggarwal

INSPIRATIONAL STORY

792 Be a Good Friend

LIGHTER READING

794 Lighter Side of Medicine

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Revisiting 2018: A Roundup of Top Health Stories in India

2018 has been an eventful year for the country, especially in the medical arena. A lot has happened and it has left all of us in anticipation of the coming year 2019.

MBBS curriculum revised after more than two decades … an ambitious target for complete elimination of tuberculosis (TB) from the country by 2025 … legislations have been passed …. some only by the Lower House …. some have been tabled in the Parliament and are yet to be discussed before they can be enacted … outbreaks ….natural calamities…. These were but few of the stories that made headlines this year.

India took a step closer to universal health coverage with the launch of Ayushman Bharat.

But, perhaps the most momentous of all events this year was the dissolution of autonomy of medical profession and replacement of the Medical Council of India (MCI) with a Board of Governors (BoG).

Let's take a look at some of the top health stories in India in 2018. These have been listed in no specific order.

MEDICAL COUNCIL OF INDIA DISSOLVED AND SO WAS THE AUTONOMY OF THE MEDICAL PROFESSION

The MCI was dissolved with immediate effect on Sept. 26, 2018 and superseded by a BoG after the Govt. brought an Ordinance called the Indian Medical Council (Amendment) Ordinance, 2018 to set up a committee to run the MCI until Parliament passes the National Medical Commission (NMC). A 7-member BoG was announced with Dr VK Paul as its chairman.

NEW MBBS CURRICULUM

The MBBS curriculum was revised. In November, the new undergraduate curriculum was finalized by the MCI BoG. It will be implemented in the 2019-20 academic session. The "Competency-based Under-Graduate Curriculum for the Indian Medical Graduate" focuses on medical ethics, better doctor-patient relationship and outcome-based learning. Another new feature is the introduction of elective subjects. Now students can pick up subjects of choice and dedicated time has been allotted for self-directed learning and co-curricular activities. The new MBBS curriculum has a course called Attitude, Ethics and Communication (AETCOM), which will run across years. Students will be assessed for how they communicate with patients; how they counsel people for organ donations or other challenging procedures; how sensitively do they offer care and obtain consent. All these things will count along with competencies and skills.

NATIONAL MEDICAL COMMISSION BILL, 2017

The government is hoping to pass the NMC Bill. The Bill is currently pending in Parliament and will be first taken up in the Lok Sabha. The Bill seeks to replace the MCI with a NMC as a regulatory body for medical education and practice in the country. Among other provisions, the Bill establishes four autonomous Boards under the supervision of the NMC: Under-Graduate Medical Education Board, Post-Graduate Medical Education Board, Medical Assessment and

Rating Board and Ethics and Medical Registration Board.

The Bill was introduced in the Lok Sabha on Dec. 29, 2017; it was referred to a Standing Committee on January 4, 2018 on account of opposition from the Indian Medical Association (IMA) to certain provisions of the Bill. The Standing Committee submitted its report on March 20, 2018 following which the Union Cabinet approved certain official amendments to the NMC Bill. It is unlikely to get passed seeing the tough stand taken by the IMA.

AYUSHMAN BHARAT - PRADHAN MANTRI JAN AROGYA YOJANA LAUNCHED

Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana, the world's largest government funded healthcare program, was launched by the Prime Minister, Shri Narendra Modi at Ranchi, Jharkhand on Sept. 23, 2018. It provides a cover of up to Rs. 5 lakhs per family per year, at any government or empanelled private hospital, for secondary and tertiary care hospitalization. More than 10 crore vulnerable entitled families - approximately 50 crore beneficiaries - will benefit from the scheme. The amount of 5 lakh would cover all investigations, medicine, pre-hospitalization expenses, etc. All pre-existing conditions are covered. There is no restriction on family size, age or gender.

INDIA SETS A TARGET FOR COMPLETE ELIMINATION OF TB BY 2025 AT THE DELHI END TB SUMMIT

"*India is determined to address the challenge of TB in mission mode. I am confident that India can be free of TB by 2025. The global target for eliminating TB is 2030, but today I announce that the target for India to eliminate TB is 2025, five years before the global target,*" said Prime Minister Narendra Modi as he inaugurated the Delhi End TB Summit and launched the TB Free India Campaign on March 13, 2018.

The Delhi End TB Summit was jointly organized by the Government of India, Stop TB Partnership and WHO South East Asia Regional Office (SEARO).

SUPREME COURT ALLOWED "LIVING WILL" IN A LANDMARK DECISION

In a landmark judgment, the Supreme Court of India allowed an individual to draft a living will specifying that they not be put on life support, if they slip into an incurable coma. The order was passed by a five judge Constitutional bench comprising Chief Justice of India, which said "Human beings have the right to die with dignity." Though the judges gave four separate opinions, all of them were unanimous that a Living Will should be allowed, because an individual should not be allowed to continue suffering in a vegetative state when they don't wish to continue living, and know well that they will not revive. However, the Apex Court has set forth strict guidelines on how to execute the mandate of the living will.

SUPREME COURT DECRIMINALIZES SECTION 377

In a historic and unanimous judgment, the Supreme Court of India has decriminalized Section 377 of the Indian Penal Code (IPC), as per which homosexuality is a punishable offence, stating that "*Section 377 is irrational, arbitrary and incomprehensible*" and termed "*sexual orientation as biological phenomenon, says any discrimination on this grounds is violative of fundamental rights*".

The Court said, "*The court must try to protect the dignity of every individual of the society, including people from LGBT community. Sexual orientation is natural and people have no control on it… consensual sex between adults in private space, which is not harmful to women or children, cannot be denied as it is a matter of individual choice.*"

SURROGACY (REGULATION) BILL 2018 PASSED BY THE LOK SABHA

The Surrogacy (Regulation) Bill 2018, which had been introduced in the Lok Sabha in 2016, was passed by the Lower House on Dec. 19, 2018. The Bill is to be debated in the Rajya Sabha and passed by the Upper House before it can be enacted.

The Bill prohibits commercial surrogacy, and allows altruistic surrogacy. Altruistic surrogacy does not involve any monetary compensation to the surrogate mother other than the medical expenses and insurance coverage during the pregnancy. The intending couple must be Indian citizens and married for at least 5 years with at least one of them being infertile. The surrogate mother has to be a close relative who has been married and has had a child of her own. Only Indian citizens can avail surrogacy.

Undertaking or advertising commercial surrogacy, exploiting the surrogate mother and selling or importing human embryo or gametes for surrogacy have been considered offences under the Bill with a penalty of 10 years and a fine of up to 10 lakh rupees.

CONSUMER PROTECTION BILL 2018 PASSED BY THE LOK SABHA

The Consumer Protection Bill 2018 was passed by the Lok Sabha on Dec. 20, 2018. The Bill, among other things, proposes setting up of the Consumer Disputes

Redressal Commission and forums at the District, State and National levels to examine and decide on consumer complaints. Appeals from the District Commissions will be heard by the State Commission and from the State Commission by the National Commission. Appeals from the National Commission will be heard by the Supreme Court.

The Bill has also defined the pecuniary jurisdiction of the three disputes redressal agencies, which have been substantially increased from those provided in the present Consumer Protection Act, 1986.

- For District Forum, the jurisdiction has been increased to Rs. 1 crore (from up to Rs. 20 lakh at present).
- For State Commission, the jurisdiction has been increased to between Rs. 1 crore and up to Rs. 10 crore (from more than 20 lakh but not exceeding Rs. 1 crore at present).
- For National Commission, the jurisdiction has been increased to above Rs. 10 crore (from more than 1 crore at present).

Other amendments proposed are as follows:

- District, state and national fora do not require judicial members.
- Not only persons but associations and other bodies can complain to consumer fora.
- Consumer Mediation cells at district, state and national level.
- District, state and national councils, which are advisory in nature.
- A Central Consumer Authority which has judicial powers, can conduct investigations, search and make judgments.

CABINET APPROVES ALLIED AND HEALTHCARE PROFESSIONS BILL, 2018

In November, the Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the Allied and Healthcare Professions Bill, 2018 for regulation and standardization of education and services by allied and healthcare professionals. The Bill provides for setting up of an Allied and Healthcare Council of India and corresponding State Allied and Healthcare Councils which will play the role of a standard-setter and facilitator for professions of Allied and Healthcare.

The Bill will also have an overriding effect on any other existing law for any of the covered professions.

NIPAH VIRUS OUTBREAK IN KERALA

In May, an outbreak of the Nipah virus was reported from Kerala. It was localized in Kozhikode and Malappuram districts of Kerala and claimed 17 lives. The outbreak was officially declared over on June 10, 2018. This was the third outbreak reported in India.

An advisory released by the Health Ministry said that "*the Nipah virus disease is not a major outbreak and is only a local occurrence*". The outbreak was traced to fruit bats. In July, the Indian Council of Medical Research (ICMR) confirmed fruit bats were the primary source of the virus.

ZIKA VIRUS OUTBREAK IN RAJASTHAN

The third outbreak of Zika virus in less than 2 years was reported in India from Jaipur in Rajasthan. The first case was reported in the end of September. More than 130 cases were detected. For the first time, during this epidemic, scientists found mosquitoes that were infected with the virus, indicating that it was being transmitted locally. Sequencing of five Zika virus strains collected during the Jaipur outbreak suggest that the known mutations linked to fetal microcephaly are not present in the current strain.

In January-February 2017, the first three cases of laboratory-confirmed Zika virus infection in India were detected in Ahmedabad, Gujarat. In the same year in July, transmission of Zika virus was also confirmed from Krishnagiri District in Tamil Nadu. The World Health Organization (WHO) puts India in category 2 in the classification of Zika's prevalence, which indicates an ongoing transmission of the virus.

HIV AND AIDS (PREVENTION AND CONTROL) ACT, 2017

The HIV and AIDS (Prevention and Control) Act, 2017 was notified by the Government and came into force from Sept. 10, 2018. The Act aims to end the epidemic by 2030 and safeguard the rights of people living with or affected by HIV by addressing HIV-related discrimination through legal accountability and establishing mechanisms for complaint enquiry and grievance redressal.

The Act lists various grounds on which discrimination against HIV-positive persons and those living with them is prohibited. These include the denial, termination, discontinuation or unfair treatment with regard to: (i) employment, (ii) educational establishments, (iii) healthcare services, (iv) residing or renting property,

(v) standing for public or private office and (vi) provision of insurance (unless based on actuarial studies). The Act also prohibits the requirement for HIV testing as a pre-requisite for obtaining employment or accessing healthcare or education.

ICMR HAS A NEW DIRECTOR GENERAL

Professor Balram Bhargava, Professor of Cardiology at All India Institute of Medical Sciences (AIIMS), New Delhi took charge as the new Director General of Indian Council of Medical Research (ICMR) and Secretary of the Department of Health Research, Ministry of Health & Family Welfare.

A NEW DIRECTOR GENERAL OF HEALTH SERVICES APPOINTED

Dr S Venkatesh is the new Director General of Health Services (DGHS).

A NEW DRUGS CONTROLLER GENERAL OF INDIA

Joint Drugs Controller Dr S Eswara Reddy was appointed as the new Drugs Controller General of India (DCGI).

NEW IMA NATIONAL PRESIDENT

Dr Santanu Sen, also a Member of Parliament, took over as the National President; Dr RV Asokan was elected as the Secretary General.

INDIA ASSUMES OFFICE OF CMAAO PRESIDENT-ELECT

Dr KK Aggarwal took over as the President-elect of Confederation of Medical Associations in Asia and Oceania (CMAAO).

SUPREME COURT BANS SALE OF BHARAT STAGE IV VEHICLES FROM APRIL 1, 2020

A three-judge bench of the Supreme Court headed by Justice Madan B Lokur has said that no Bharat Stage (BS)-IV vehicle shall be sold across the country with effect from April 1, 2020. The BS-VI emission norm would come into force from April 1, 2020 across the country.

The BS-IV norms have been enforced across the country since April 2017. In 2016, the Centre had announced that the country would skip the BS-V norms altogether and adopt BS-VI norms by 2020. The apex court was deciding whether grace period should be given to automobile manufacturers for the sale of BS-VI non-compliant vehicles after April 1, 2020.

MTNL PERFECT HEALTH MELA CELEBRATED ITS SILVER JUBILEE

The MTNL Perfect Health Mela, the annual flagship event of the Heart Care Foundation of India (HCFI), celebrated its silver jubilee with the theme "Affordable Healthcare". A National Campaign on Hands-only CPR 10 in collaboration with Ministry of Youth Affairs, Govt. of India, was launched on the inaugural day. "Evening Conclaves" thematic panel discussions with celebrity guests were the highlight of the Mela this year. Topics discussed at these Conclaves included antimicrobial resistance, indoor pollution, harm reduction, safe water and air, CSR, infertility and noncommunicable diseases.

A one-of-its-kind Spiritual Inter-Faith Conference on air, sanitation and antimicrobial resistance was also organized by HCFI along with the World Fellowship of Religions, in which eminent Dharma Gurus of all religions participated as speakers.

KERALA FLOODS

In August, Kerala battled its worst flood in 100 years. All 14 districts of the state were placed on red alert. According to the Kerala government, one-sixth of the total population of Kerala had been directly affected by the floods and related incidents. The Government of India declared it a Level 3 Calamity, or "calamity of a severe nature".

VIRAL LOAD TEST FOR PEOPLE LIVING WITH HIV/AIDS

The Viral Load testing for all People Living with HIV/AIDS (PLHIV) was launched by the Health Minister in February, as "a big step forward in treating and monitoring people living with HIV". The initiative will provide free of cost viral load testing for 12 lakh PLHIV on treatment in the country at least once a year. It will optimize the utilization of first-line regimens, thus preventing drug resistance. It will also help in strengthening 'Mission Sampark' in tracking LFU (Loss to Follow-Up) PLHIV.

GOVT. BAN ON MANUFACTURE OF OXYTOCIN FORMULATIONS SET ASIDE BY DELHI HIGH COURT

In May, the Ministry of Health and Family Welfare restricted the manufacture of oxytocin formulations for domestic use to public sector only. It also banned the import of oxytocin and its formulations. This order was to come into effect from July 1, 2018.

As per the order, no private manufacturer would be allowed to manufacture the drug for domestic use. Only Karnataka Antibiotics & Pharmaceuticals

Ltd (KAPL), a public sector company, would be manufacturing this drug for domestic use and will supply the drug to registered hospitals and clinics in public and private sector directly. Oxytocin in any form or name would not be allowed to be sold through retail chemist.

But, on Dec. 14, the Hon'ble Delhi High Court set aside the Govt.'s decision to ban private firms from producing and selling oxytocin. The bench of Hon'ble Justice S Ravindra Bhat and Hon'ble Justice AK Chawla said that the government's decision was arbitrary and unreasonable and that there was no scientific basis behind the Center's decision restricting private companies from making or supplying the drug to prevent its alleged misuse in the dairy sector for increasing milk production.

CABINET APPROVES THE PROTECTION OF HUMAN RIGHTS (AMENDMENTS) BILL, 2018

The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the Protection of Human Rights (Amendments) Bill, 2018 for better protection and promotion of human rights in the country.

NATIONAL VIRAL HEPATITIS CONTROL PROGRAM LAUNCHED

The National Viral Hepatitis Control Program was launched by the Health Minister on World Hepatitis Day (July 28) with the goal of ending viral hepatitis as a public health threat by 2030 in the country.

INDIA RETAINS THE WHO SOUTH-EAST ASIA REGIONAL DIRECTOR POSITION

India retained the top WHO position in SEARO with Dr Poonam Khetrapal Singh unanimously re-elected as Regional Director WHO South-East Asia for another 5-year term beginning February 2019. She is the first woman to have been elected to the position of Regional Director for WHO South-East Asia Region after an illustrious career in the Indian Civil Service, World Bank and WHO.

Last year Dr Soumya Swaminathan, an Indian Pediatrician and Director General ICMR and a clinical scientist known for her work on TB was appointed as the Deputy Director General of Programs at the WHO on Oct. 3, 2017.

ENDS CONTROVERSY

In August, the Ministry of Health released an advisory on Electronic Nicotine Delivery Systems (ENDS) including e-cigarettes, Heat-Not-Burn devices, Vape, e-Sheesha, e-Nicotine Flavored Hookah, and the like products asking states not to allow its sale or distribution.

But on Dec. 28, Public Health England (PHE) released a new film showing the devastating harms that come from smoking, and how this can be avoided by switching to an e-cigarette or using another type of quit aid.

The film has been released as part of PHE's Health Harms campaign, which encourages smokers to attempt to quit, by demonstrating the personal harm to health from every single cigarette. The film features smoking expert Dr Lion Shahab and Dr Rosemary Leonard, visually demonstrating the high levels of cancer-causing chemicals and tar inhaled by an average smoker over a month, compared to not smoking or using an e-cigarette. Research estimates that while not risk-free, vaping is at least 95% less harmful than smoking.

Dr Lion Shahab, leading smoking cessation academic from University College London, said: "*The false belief that vaping is as harmful as smoking could be preventing thousands of smokers from switching to e-cigarettes to help them quit. Research we and others have conducted shows that vaping is much less harmful than smoking and that using e-cigarettes on a long-term basis is relatively safe, similar to using licensed nicotine products, like nicotine patches or gum. Using e-cigarettes or nicotine replacement such as patches or gum will boost your chances of quitting successfully.*"

GOVT. BANS USE OF ANTIBODY TEST KITS TO DIAGNOSE MALARIA

The Health Ministry prohibited the manufacture for sale, sale and distribution of the test kits used in Antibody Detecting Rapid Diagnostic Tests for routine diagnosis of malaria after it was found that the test was triggering false alarms. As per the notification, although the test is economical, the false positive rates in endemic areas were high. People with fever who tested positive in the rapid antibody test, were later tested negative in antigen test.

PLASTIC WASTE MANAGEMENT (AMENDMENT) RULES NOTIFIED

The Ministry of Environment, Forest and Climate Change has notified the Plastic Waste Management (Amendment) Rules 2018. The amended rules lay down that the phasing out of multilayered plastic (MLP) is now applicable to MLP, which are "non-recyclable, or non-energy recoverable, or with no alternate use."

AMERICAN FAMILY PHYSICIAN

Autism Spectrum Disorder: Primary Care Principles

KRISTIAN E. SANCHACK, CRAIG A. THOMAS

ABSTRACT

Autism spectrum disorder is characterized by difficulty with social communication and restricted, repetitive patterns of behavior, interest, or activities. The *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed., created an umbrella diagnosis that includes several previously separate conditions: autistic disorder, Asperger syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified. There is insufficient evidence to recommend screening for autism spectrum disorder in children 18 to 30 months of age in whom the disorder is not suspected; however, there is a growing body of evidence that early intensive behavioral intervention based on applied behavior analysis improves cognitive ability, language, and adaptive skills. Therefore, early identification of autism spectrum disorder is important, and experts recommend the use of a validated screening tool at 18- and 24-month well-child visits. Medications can be used as adjunctive treatment for maladaptive behaviors and comorbid psychiatric conditions, but there is no single medical therapy that is effective for all symptoms of autism spectrum disorder. Prognosis is heavily affected by the severity of diagnosis and the presence of intellectual disability. Children with optimal outcomes receive earlier, more intensive behavioral interventions and less pharmacologic treatment.

Keywords: Autism spectrum disorder, etiology, diagnosis, behavioral treatment, medical management

Autism was first described by psychiatrist Leo Kanner in 1943 as a disorder in children who had problems relating to others and a high sensitivity to changes in their environment.[1] Although it appeared to be a rare disorder at that time, the prevalence of autism spectrum disorder (ASD) steadily increased. The Centers for Disease Control and Prevention's (CDC's) monitored network of 11 locations has described an autism prevalence of one in 68 children, with a male-to-female ratio of 4.5-to-1.[2] These data correlate with other studies across multiple nations and widely separated locations.[3,4]

The increase in ASD prevalence may be partially attributed to the evolving diagnostic criteria prior to the publication of *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. (DSM-5), an increase in social awareness, and mandatory availability of treatments. Additionally, school-aged children with higher functioning are being diagnosed with previously unrecognized ASD.[5-7]

In 2013, DSM-5 created the umbrella diagnosis of ASD, consolidating four previously separate disorders: autistic disorder, Asperger syndrome, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified.[8]

ETIOLOGY

Studies of the genetic heritability of ASD range from 40% to 90%, with most recent estimates at nearly 50% genetic liability. The genetic contribution to ASD occurs via a diverse group of mutational mechanisms along many biologic pathways.[9-12] Additional risk is associated with environmental factors. Prenatal risks include advanced paternal or maternal age and maternal metabolic conditions, such as diabetes mellitus, hypertension, and obesity.[13]

In utero risks include valproate exposure, maternal infections, traffic-related air pollution, and pesticide exposure.[13] Perinatal events such as low birth weight and preterm delivery increase the risk of ASD as a part of the greater overall risk of neurodevelopmental injury.[13] Previous concerns for causality related to thimerosal-based vaccines have been conclusively disproven. A summary of this evidence is available to review with concerned parents on the CDC's website at http://www.cdc.gov/vaccinesafety/concerns/autism.html.[14]

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CRAIG A. THOMAS, LT, MC, USN, is a staff physician at Naval Hospital Pensacola (Fla). At the time the article was submitted, Dr. Thomas was a third-year resident in the Family Medicine Residency Program at Naval Hospital Jacksonville.

Source: Adapted from Am Fam Physician. 2016;94(12):972-979.

CLINICAL PRESENTATION

Key diagnostic features of children with ASD include deficits in social communication and restricted, repetitive patterns of behavior, interest, or activities. The diagnostic criteria exist on a continuum of severity and functional impairment (Tables 1 and 2).[8] Some signs and symptoms may emerge between six and 12 months of age. In many cases, a reliable diagnosis can be made by 24 months of age.[15-17] Social deficits and delays in spoken language are the most prominent features in children younger than three years. Joint attention is the ability to coordinate one's own attention between another person and a distant object to share interest. Neurotypical children respond to joint attention at 12 months of age and initiate it by 14 months of age. Those not demonstrating joint attention after 15 months of age should be evaluated for ASD. Parents may present with a concern for hearing loss because children with ASD may not respond after multiple attempts to get their attention by calling their name.[18-21]

Delayed language development should raise concerns. Language delay at 18 to 24 months of age without compensatory pointing or gesturing may help differentiate between ASD and expressive language delay. Echolalia used as the only language in a child older than 24 months is associated with ASD.[18-21]

A restricted range of interest and repetitive behaviors are required for diagnosis of ASD. These may be less apparent in younger children and exist on a continuum. Change in routine is often a significant challenge for children with ASD. Unusual play patterns may be noted, such as focus on only part of a toy. Children with ASD may demonstrate stereotypic movements, such as hand flapping, toe walking, or finger flicking near their eyes[18-21] (Table 3[18]). A confounding variable for diagnosis is that children with ASD may have several coexisting conditions that impact the severity of the impairment (Table 4 [2,18,22-29]).

SCREENING

Screening tools help identify children who may need a more thorough diagnostic assessment. Formal screening is more effective than relying on clinical judgment alone.[30] However, there are no randomized clinical trials assessing the effectiveness of screening for ASD in children three years or younger based on long-term outcomes. The American Academy of Family Physicians and the U.S. Preventive Services Task Force found insufficient evidence to make a recommendation for screening in children 18 to 30 months of age in whom no concerns of ASD are suspected.[31,32] Routine developmental screening is suggested at nine-, 18-, and 24- or 30-month well-child visits.[33,34] The American Academy of Pediatrics recommends targeted screening for ASD with a validated screening tool at 18 and 24 months of age for early identification.[33,35] The Modified Checklist for Autism in Toddlers (M-CHAT) is the most widely used screening tool. However, when used alone, it has poor positive predictive value and a high false-positive rate. The authors of that tool have since published the Modified Checklist for Autism in Toddlers–Revised, with Follow-Up (M-CHAT-R/F).[36] The M-CHAT-R/F is a two-stage parent-reported screening tool to assess the risk of ASD. The M-CHAT-R/F may be downloaded free of charge for clinical, research, and educational purposes at http://mchatscreen.com/wp-content/uploads/2015/09/M-CHAT-R_F.pdf. A positive screening test result or parental concerns at any age should be followed by a structured interview and, if indicated, a referral for diagnostic assessment.[33,35]

REFERRAL AND DIAGNOSIS

Evaluation for ASD should include a comprehensive assessment, preferably by an interdisciplinary team[33,35] (eTable A). The evaluation aims to definitively diagnose ASD, exclude conditions that mimic ASD, identify comorbid conditions, and determine the child's level of functioning. In the absence of a team, an individual clinician with expertise in evaluating ASD (e.g., child psychologist, developmental pediatrician) is appropriate. The evaluation should include a complete history and direct assessment of social communication skills and restricted, repetitive behaviors using a semi-structured tool (e.g., the Autism Diagnostic Observation Schedule, 2nd ed.) with standardized testing of language and cognitive skills. The diagnosis must be confirmed using the DSM-5 criteria for ASD.[33-36]

BEHAVIORAL TREATMENTS

Early intensive behavioral intervention is an immersive behavioral therapy for at least 25 hours per week that is recommended for preschool- to early school–aged children with ASD.[37] Applied behavior analysis is a cornerstone of most early intensive behavioral intervention approaches. It seeks to teach new skills by reinforcing desirable behaviors, encouraging generalization of these skills, and decreasing undesirable behaviors. In a landmark study published in 1987 based on the principles of applied behavior analysis, one-half of the patients assigned to treatment were able to be placed in a neurotypical classroom and complete first grade.[38]

IJCP SUTRA 566: If you have a family history of brain cancer, avoid mobile phones.

Table 1. Diagnostic Criteria for Autism Spectrum Disorder

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.
2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.
3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Specify current severity: **Severity is based on social communication impairments and restricted, repetitive patterns of behavior** (see Table 2).

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat same food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests).
4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Specify current severity: **Severity is based on social communication impairments and restricted, repetitive patterns of behavior** (see Table 2).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication should be below that expected for general developmental level.

Note: Individuals with a well-established DSM-IV diagnosis of autistic disorder, Asperger's disorder, or pervasive developmental disorder not otherwise specified should be given the diagnosis of autism spectrum disorder. Individuals who have marked deficits in social communication, but whose symptoms do not otherwise meet criteria for autism spectrum disorder, should be evaluated for social (pragmatic) communication disorder.

Specify if:

With or without accompanying intellectual impairment

With or without accompanying language impairment

Associated with a known medical or genetic condition or environmental factor (Coding note: Use additional code to identify the associated medical or genetic condition.)

Associated with another neurodevelopmental, mental, or behavioral disorder (Coding note: Use additional code[s] to identify the associated neurodevelopmental, mental, or behavioral disorder[s].)

With catatonia (refer to the criteria for catatonia associated with another mental disorder, pp. 119-120, for definition) (**Coding note:** Use additional code 293.89 [F06.1] catatonia associated with autism spectrum disorder to indicate the presence of the comorbid catatonia.)

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Table 2. Severity Levels for Autism Spectrum Disorder

Severity level	Social communication	Restricted, repetitive behaviors
Level 3 "Requiring very substantial support"	Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning, very limited initiation of social interactions, and minimal response to social overtures from others. For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches.	Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action.
Level 2 "Requiring substantial support"	Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions; and reduced or abnormal responses to social overtures from others. For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and who has markedly odd nonverbal communication.	Inflexibility of behavior, difficulty coping with change, or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action.
Level 1 "Requiring support"	Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions, and clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions. For example, a person who is able to speak in full sentences and engages in communication but whose to-and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.	Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence.

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Table 4. Conditions Associated with Autism Spectrum Disorder

Condition	Frequency	Feature
Psychiatric conditions	63% to 96%	High prevalence for anxiety, attention-deficit/hyperactivity disorder, depression[22]
Motor impairments	51%; decreasing to 38% over time	Can include hypotonia, apraxia, clumsiness, toe walking, and gross motor delays; may improve through therapy or naturally over time[23]
Insomnia	50% to 80%	Commonly reported by parents; melatonin can improve sleep; also important to address sleep hygiene[24-27]
Intellectual disability	20% to 50%	The Autism and Developmental Disabilities Monitoring Network classified 32% of children with autism spectrum disorder in the range of intellectual disability (IQ score ≤ 70 or the presence of an examiner's statement of intellectual disability), 25% were classified in the borderline range (IQ = 71 to 85), and 44% were classified in the average or above average range (IQ > 85 or the presence of an examiner's statement of average or above average intellectual ability)[2]
Epilepsy	12% to 26%	Increased risk in older adolescents and patients with lower cognitive ability[28]
Gastrointestinal problems	9% to 91%	Chronic constipation, diarrhea, and abdominal pain[29]

Information from references 2, 18, and 22 through 29.

In 2014, the Agency for Healthcare Research and Quality updated a systematic review of existing and new randomized clinical trials and cohort studies. This rigorous review found a growing body of evidence that an applied behavior analysis–based early intensive behavioral intervention delivered over an extended time frame leads to improvement in cognitive ability, language, and adaptive skills.[39] These effects were clinically and statistically significant.

Strong evidence shows that cognitive behavior therapy substantially reduces anxiety symptoms in older children with ASD who have average to above-average IQ.[39] Several other behavioral interventions have also been examined but have limited evidence of benefit. Targeted play has led to improvements in early social communication skills.[39] Social skills training has demonstrated short-term improvement in social skills and emotional recognition in school-aged children

without intellectual dysfunction.[39] Parent training and education programs improve language skills and decrease disruptive behavior in children.[39,40]

MEDICAL MANAGEMENT

Although there is no medication available to treat the composite symptoms of ASD, medical management can be a beneficial adjunct. Medical treatment targets specific maladaptive behaviors for which intensive behavioral therapy has not been effective. Medical management may also target comorbid diagnoses, such as anxiety disorders, attention-deficit/hyperactivity disorder (ADHD), and sleep disorders. Underlying conditions such as headaches, sinusitis, and gastrointestinal disorders can mimic or increase behavior symptoms common to ASD. These conditions should be ruled out before initiating targeted therapy.[18,41]

Aripiprazole and risperidone are the only medications approved by the U.S. Food and Drug Administration for the treatment of ASD. These atypical antipsychotics are approved for ASD-associated irritability and, in some trials, have proven beneficial for treating aggression, explosive outbursts, and self-injury.[42,43] Aripiprazole is approved for children six to 17 years of age.[42] Risperidone is approved for children five to 16 years of age.[43] Although these medications may provide some benefits, they must be weighed against serious potential adverse effects including sedation, weight gain, tremor, and extrapyramidal symptoms. Subspecialty referral should be strongly considered for these treatments.

Stimulants such as methylphenidate may prove beneficial in children with comorbid ADHD, but treatment effects are less significant than in children without ASD and adverse effects are more common. Non–stimulant-based treatments may have a larger role in children with comorbid ADHD and have shown fewer adverse effects.[44]

Complementary and Alternative Treatments

Families of children with ASD are likely to try complementary and alternative treatments.[24] A full list of treatments is beyond the scope of this article, but several therapies merit review. There is strong evidence that melatonin helps manage sleep disorders, improves daytime behavior, and has minimal adverse effects.[24-26] Massage therapy has been studied in several single-blinded randomized controlled trials that demonstrated benefits on ASD symptoms, sleep, language, repetitive behaviors, and anxiety. Massage can be performed by parents and has no evidence of harm.[24] A large randomized controlled trial of therapeutic horseback riding showed improvements in irritability and hyperactivity in children, with secondary outcomes of improved social communication and new word acquisition.[45]

Vitamin B_6 and magnesium in larger doses have been studied for use in children with ASD to improve behavior, speech, and language. Results were equivocal, and at supratherapeutic doses, there is risk of neuropathy from vitamin B_6 and diarrhea from magnesium toxicity.[24,46] Additional treatments that are not recommended because they have not shown benefit across several randomized clinical trials include auditory integration training, facilitated communication, gluten- or casein-free diets, hyperbaric oxygen, and secretin.[24,46,47]

PROGNOSIS

Outcome markers for adults with ASD include independent living, employment, friendship, and marriage. Early studies found that more than one-half of infants with autism were institutionalized. A high percentage of patients were described as having poor or very poor outcomes.[48] Recent studies show slightly improved results. One limited study found that 12% of adults with ASD and an IQ of at least 70 lived independently.[49]

A 2012 study examined diagnostic stability as a marker of prognosis. Results showed that more than 80% of patients retain the same level of severity on repeat Autism Diagnostic Observation Schedule assessments over an eight- to 10-year interval, and only 15% were assigned to improving or worsening classes of ASD. Diagnostic severity and IQ levels were the best predictors of future function. The mildest class of ASD was dropped from this analysis, which left a bias toward more severe presentations.[50]

A small percentage of children with a documented history of ASD no longer meet diagnostic criteria and reach normal cognitive function. These children achieve an optimal outcome. When compared with a high-functioning ASD cohort, children with optimal outcomes had earlier referrals and more intensive interventions with more applied behavior analysis therapy and fewer pharmacologic interventions.[51]

Some articles have reframed the lens of rating scales by incorporating the patient's opinion as well as the parent's or caregiver's rating. These studies reflect a higher percentage of positive outcomes for patients with ASD based on the person-environment fit. Increasing

daytime recreational activities and community inclusion improved the person-environment fit, resulting in higher levels of satisfaction. Additional studies that consider the entire autistic spectrum are needed to help clarify individual prognosis.[48]

Note: For complete article visit: www.aafp.org/afp.

REFERENCES

1. Kanner L. Autistic disturbances of affective contact. Nervous Child. 1943;2:217-250.
2. Christensen DL, Baio J, Braun KV, et al. Prevalence and characteristics of autism spectrum disorder among children aged 8 years - Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2012. MMWR Surveill Summ. 2016;65(3):1-23.
3. Boyle CA, Boulet S, Schieve LA, et al. Trends in the prevalence of developmental disabilities in US children, 1997-2008. Pediatrics. 2011;127(6):1034-1042.
4. Elsabbagh M, Divan G, Koh YJ, et al. Global prevalence of autism and other pervasive developmental disorders. Autism Res. 2012;5(3):160-179.
5. Blenner S, Augustyn M. Is the prevalence of autism increasing in the United States? BMJ. 2014;348:g3088.
6. Zylstra RG, Prater CD, Walthour AE, Aponte AF. Autism: why the rise in rates? J Fam Pract. 2014;63(6):316-320.
7. Blumberg SJ, Bramlett MD, Kogan MD, Schieve LA, Jones JR, Lu MC. Changes in prevalence of parent-reported autism spectrum disorder in school-aged U.S. children: 2007 to 2011-2012. Natl Health Stat Report. 2013;(65):1-11.
8. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington, DC: American Psychiatric Association; 2013.
9. Colvert E, Tick B, McEwen F, et al. Heritability of autism spectrum disorder in a UK population-based twin sample. JAMA Psychiatry. 2015;72(5):415-423.
10. Talkowski ME, Minikel EV, Gusella JF. Autism spectrum disorder genetics: diverse genes with diverse clinical outcomes. Harv Rev Psychiatry. 2014;22(2):65-75.
11. Ozonoff S, Young GS, Carter A, et al. Recurrence risk for autism spectrum disorders: a Baby Siblings Research Consortium study. Pediatrics. 2011;128(3):e488-e495.
12. Hallmayer J, Cleveland S, Torres A, et al. Genetic heritability and shared environmental factors among twin pairs with autism. Arch Gen Psychiatry. 2011;68(11):1095-1102.
13. Mandy W, Lai MC. Annual research review: the role of the environment in the developmental psychopathology of autism spectrum condition. J Child Psychol Psychiatry. 2016;57(3):271-292.
14. Centers for Disease Control and Prevention. Vaccine safety: vaccines do not cause autism. http://www.cdc.gov/vaccinesafety/concerns/autism.html. Accessed September 16, 2015.
15. Charman T, Baird G. Practitioner review: diagnosis of autism spectrum disorder in 2- and 3-year-old children. J Child Psychol Psychiatry. 2002;43(3):289-305.
16. Lord C, Risi S, DiLavore PS, Shulman C, Thurm A, Pickles A. Autism from 2 to 9 years of age. Arch Gen Psychiatry. 2006;63(6):694-701.
17. Guthrie W, Swineford LB, Nottke C, Wetherby AM. Early diagnosis of autism spectrum disorder: stability and change in clinical diagnosis and symptom presentation. J Child Psychol Psychiatry. 2013;54(5):582-590.
18. Carbone PS, Farley M, Davis T. Primary care for children with autism. Am Fam Physician. 2010;81(4):453-460.
19. Johnson CP. Recognition of autism before age 2 years. Pediatr Rev. 2008;29(3):86-96.
20. Blenner S, Reddy A, Augustyn M. Diagnosis and management of autism in childhood. BMJ. 2011; 343:d6238.
21. Baird G, Douglas HR, Murphy MS. Recognising and diagnosing autism in children and young people: summary of NICE guidance. BMJ. 2011;343:d6360.
22. van Steensel FJ, Bögels SM, de Bruin EI. Psychiatric comorbidity in children with autism spectrum disorders: a comparison with children with ADHD. J Child Fam Stud. 2013;22(3):368-376.
23. Ming X, Brimacombe M, Wagner GC. Prevalence of motor impairment in autism spectrum disorders. Brain Dev. 2007;29(9):565-570.
24. Lofthouse N, Hendren R, Hurt E, Arnold LE, Butter E. A review of complementary and alternative treatments for autism spectrum disorders. Autism Res Treat. 2012;2012:870391.
25. Garstang J, Wallis M. Randomized controlled trial of melatonin for children with autistic spectrum disorders and sleep problems. Child Care Health Dev. 2006;32(5):585-589.
26. Rossignol DA, Frye RE. Melatonin in autism spectrum disorders: a systematic review and meta-analysis. Dev Med Child Neurol. 2011;53(9):783-792.
27. Brahm N, Stewart D. Autism spectrum disorders and sleep disturbances in a pediatric patient. Mental Health Clinician. 2014;4(2):47-51.
28. Viscidi EW, Triche EW, Pescosolido MF, et al. Clinical characteristics of children with autism spectrum disorder and co-occurring epilepsy. PLoS One. 2013;8(7):e67797.
29. Hsiao EY. Gastrointestinal issues in autism spectrum disorder. Harv Rev Psychiatry. 2014;22(2):104-111.
30. Miller JS, Gabrielsen T, Villalobos M, et al. The each child study: systematic screening for autism spectrum disorders in a pediatric setting. Pediatrics. 2011; 127(5):866-871.
31. American Academy of Family Physicians. Clinical Preventive Service Recommendation. Autism spectrum: children (aged 18 to 30 months). http://www.aafp.org/patient-care/clinical-recommendations/all/autism-children.html. Accessed May 14, 2016.

32. Siu AL, Bibbins-Domingo K, Grossman DC, et al. Screening for autism spectrum disorder in young children: U.S. Preventive Services Task Force recommendation statement. JAMA. 2016;315(7):691-696.
33. Council on Children With Disabilities; Section on Developmental Behavioral Pediatrics; Bright Futures Steering Committee; Medical Home Initiatives for Children With Special Needs Project Advisory Committee. Identifying infants and young children with developmental disorders in the medical home: an algorithm for developmental surveillance and screening [published correction appears in Pediatrics. 2006;118(4):1808-1809]. Pediatrics. 2006;118(1):405-420.
34. Volkmar F, Siegel M, Woodbury-Smith M, King B, McCracken J, State M; American Academy of Child and Adolescent Psychiatry Committee on Quality Issues. Practice parameter for the assessment and treatment of children and adolescents with autism spectrum disorder [published correction appears in J Am Acad Child Adolesc Psychiatry. 2014;53(8):931]. J Am Acad Child Adolesc Psychiatry. 2014;53(2):237-257.
35. Zwaigenbaum L, Bauman ML, Fein D, et al. Early screening of autism spectrum disorder: recommendations for practice and research. Pediatrics. 2015;136(suppl 1): S41-S59.
36. Robins DL, Fein D, Barton M. Modified checklist for autism in toddlers, revised, with follow-up (M-CHAT-R/F). http://mchatscreen.com/wp-content/uploads/2015/09/M-CHAT-R_F.pdf. Accessed April 15, 2016.
37. Maglione MA, Gans D, Das L, Timbie J, Kasari C; Technical Expert Panel; HRSA Autism Intervention Research–Behavioral Network. Nonmedical interventions for children with ASD: recommended guidelines and further research needs. Pediatrics. 2012;130(suppl 2): S169-S178.
38. Lovaas OI. Behavioral treatment and normal educational and intellectual functioning in young autistic children. J Consult Clin Psychol. 1987;55(1): 3-9.
39. Weitlauf AS, McPheeters ML, Peters B, et al. Therapies for children with autism spectrum disorder: behavioral interventions update. AHRQ Comparative Effectiveness Reviews. Report no. 14-EHC036-EF. Rockville, Md.: Agency for Healthcare Research and Quality; 2014.
40. Bearss K, Johnson C, Smith T, et al. Effect of parent training vs parent education on behavioral problems in children with autism spectrum disorder: a randomized clinical trial [published correction appears in JAMA. 2016;316(3):350]. JAMA. 2015;313(15):1524-1533.
41. Dove D, Warren Z, McPheeters ML, Taylor JL, Sathe NA, Veenstra-VanderWeele J. Medications for adolescents and young adults with autism spectrum disorders: a systematic review. Pediatrics. 2012;130(4):717-726.
42. Ching H, Pringsheim T. Aripiprazole for autism spectrum disorders (ASD). Cochrane Database Syst Rev. 2012;(5):CD009043.
43. Jesner OS, Aref-Adib M, Coren E. Risperidone for autism spectrum disorder. Cochrane Database Syst Rev. 2007;(1):CD005040.
44. Davis NO, Kollins SH. Treatment for co-occurring attention deficit/hyperactivity disorder and autism spectrum disorder. Neurotherapeutics. 2012;9(3):518-530.
45. Gabriels RL, Pan Z, Dechant B, Agnew JA, Brim N, Mesibov G. Randomized controlled trial of therapeutic horseback riding in children and adolescents with autism spectrum disorder. J Am Acad Child Adolesc Psychiatry. 2015;54(7):541-549.
46. Nye C, Brice A. Combined vitamin B6-magnesium treatment in autism spectrum disorder. Cochrane Database Syst Rev. 2005;(4):CD003497.
47. Kendall T, Megnin-Viggars O, Gould N, Taylor C, Burt LR, Baird G; Guideline Development Group. Management of autism in children and young people: summary of NICE and SCIE guidance. BMJ. 2013;347:f4865.
48. Henninger NA, Taylor JL. Outcomes in adults with autism spectrum disorders: a historical perspective. Autism. 2013; 17(1):103-116.
49. Farley MA, McMahon WM, Fombonne E, et al. Twenty-year outcome for individuals with autism and average or near-average cognitive abilities. Autism Res. 2009;2(2):109-118.
50. Gotham K, Pickles A, Lord C. Trajectories of autism severity in children using standardized ADOS scores. Pediatrics. 2012;130(5):e1278-e1284.
51. Orinstein AJ, Helt M, Troyb E, et al. Intervention for optimal outcome in children and adolescents with a history of autism. J Dev Behav Pediatr. 2014;35(4):247-256.

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Right Heart Failure: Rule of 12

- Ascites means portal pressure of more than 12 mmHg.
- Maximum spleen dimension of ≥12 cm provides indirect evidence of portal hypertension. The absence of flank dullness is the most accurate predictor against the presence of ascites; the probability of ascites being present is less than 12% in such patients.

Practice Guidelines

ACP/CDC PROVIDE GUIDELINES ON THE USE OF ANTIBIOTICS FOR ACUTE RESPIRATORY TRACT INFECTION

Approximately one-half of outpatient antibiotic prescriptions may be inappropriate or unnecessary, imposing high economic and public health costs. The American College of Physicians (ACP) and Centers for Disease Control and Prevention (CDC) guideline on appropriate antibiotic use in the treatment of healthy adults with acute respiratory tract infection outlines one of the medical community's top priorities. Currently, most antibiotics prescribed in the office setting are for illnesses in this category, despite evidence that they may cause harm or otherwise do not benefit patients with some of the most common infections.

Providing High-Value Care

Nonviral etiologies of acute uncomplicated bronchitis are rare but often indistinguishable from viral causes. Bacterial infections may not always warrant antibiotics, such as in cases of acute cough. Evidence does not show a higher standard of clinical improvement when antibiotics are used to treat bronchitis compared with placebo. Over-the-counter therapies, which are less likely to cause harm, may provide symptom relief. Diagnostic testing and antibiotic therapy for acute uncomplicated bronchitis should be avoided unless pneumonia is suspected.

Pharyngitis is similarly unlikely to be caused by a bacterial pathogen, but requires that physicians use rapid antigen detection testing, throat culture, or both to rule out group A *Streptococcus* or serious infection if suspicious symptoms are present. Clinical scoring systems are available to assist in differentiating bacterial from viral etiologies of pharyngitis. Most patients with sore throat do not need a prescription medication, but they may benefit from analgesics. However, a positive streptococcal test should prompt appropriate narrow-spectrum antibiotic therapy.

Supportive care is the most suitable option for most patients with acute rhinosinusitis. Such infections are self-limited in almost all cases, even when bacterial. Antibiotics are largely ineffective and are more likely to cause harm than benefit unless rhinosinusitis symptoms indicate a bacterial cause, for example, they persist for more than 10 days or reappear after a period of improvement, called "double sickening." Other severe signs and symptoms that suggest bacterial infection are purulent nasal discharge with high fever or facial pain lasting at least three days in a row.

Antibiotics do not improve symptoms or prevent complications of the common cold. A number of symptomatic therapies may be offered instead.

Discussing Antibiotic Use with Patients

Over the course of a year, most adults will experience at least two acute respiratory tract infections. Educating patients about symptom duration (e.g., coughing can last up to six weeks) is a recognized approach to overcoming barriers to appropriate antibiotic prescribing. Additional talking points include addressing the serious harm that can result from use of antibiotics, such as *Clostridium difficile* infection, and their failure to reduce the time to recovery for most acute respiratory tract infections.

Source: Adapted from Am Fam Physician. 2016;94(12):1016.

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Temperature-pulse Relationship

- The temperature-pulse relationship is linear in healthy subjects.
- There is an increase in heart rate of 4.4 beats/min for each 1°C (2.44 beats/min for each 1°F) rise in core temperature.
- Temperature-pulse dissociation (relative bradycardia) is seen in typhoid fever, brucellosis, leptospirosis, some drug-induced fevers and factitious fever.

Photo Quiz

LATERAL NECK LESIONS WITH VISION CHANGES

A 39-year-old man presented with bilateral blurry vision that began suddenly three days prior. He did not have any recent eye injuries, irritation, pain, or drainage. He had no other symptoms.

Physical examination revealed normal conjunctiva and sclera without erythema, discharge, or foreign body; the pupils were normal. Funduscopy showed abnormal streaks in a spoke-like pattern extending from the optic disc. Confluent, yellow papules and plaques were observed on the lateral aspects of the neck (Figure 1). The skin changes had developed during middle school, and the patient attributed it to a birthmark. The lesions were not painful or pruritic.

Question

Based on the patient's history and physical examination findings, which one of the following is the most likely diagnosis?

A. Cutis laxa.

B. Dermatofibrosis lenticularis disseminata.

C. Hyperlipidemia xanthoma.

D. Lichen simplex chronicus.

E. Pseudoxanthoma elasticum.

Discussion

The answer is E: pseudoxanthoma elasticum. This autosomal recessive connective tissue disorder leads to the calcification of the elastic tissues in the skin, eyes, and vasculature. Characteristic skin manifestations include yellow, confluent, papular skin lesions that occur on the neck, axillae, and other body folds.[1] The lesions have been described as leathery, or like cobblestones or plucked chicken skin.[2] Calcification can contribute to a loss of skin elasticity. Skin changes are subtle and commonly overlooked by the patient. Ocular manifestations of pseudoxanthoma elasticum appear between 20 and 40 years of age and include angioid streaks and retinal epithelial mottling, with progression to vision loss late in the disease course.

Source: Adapted from Am Fam Physician. 2016;94(11):921-922.



Figure 1.

Vascular changes are the most serious and life-threatening complications of pseudoxanthoma elasticum. These complications are a result of abnormal collagen, deposition of calcium, and loss of elasticity of the blood vessels. Patients are at increased risk of gastrointestinal hemorrhage, claudication, cerebrovascular accidents, angina, and myocardial infarction. Biopsy of the skin lesions is diagnostic. Vascular changes may also be noted on extremity radiography and arteriography studies. If pseudoxanthoma elasticum is suspected, evaluation for vascular complications and internal bleeding is recommended, including ophthalmology and cardiology evaluations. There is no cure, but management of blood pressure and cholesterol may reduce cardiac risk. Genetic counseling is suggested because of the genetic nature of disease.[1]

Cutis laxa is associated with several genetic and acquired disorders that result in changes of skin elasticity. The skin appears loose, wrinkled, or hanging off the body. Cutis laxa is a common finding in patients with pseudoxanthoma elasticum. There is no treatment for the loss of skin elasticity, but cosmetic surgery is an option for some patients.[1]

Dermatofibrosis lenticularis disseminata is an autosomal dominant disorder that is an association between

Summary Table

Condition	Characteristics
Cutis laxa	Changes in skin elasticity, skin appears loose and wrinkled
Dermatofibrosis lenticularis	Yellow papules or plaques on the trunk and extremities, increased skin elasticity
Hyperlipidemia xanthoma	Yellow papules or plaques on elbows, knees, and buttocks
Lichen simplex chronicus	Circumscribed plaques, typically on the neck, scalp, legs, arms, and anogenital region, as a result of scratching
Pseudoxanthoma elasticum	Yellow, confluent, papular lesions on the neck, axillae, and other body folds; skin has leathery, cobblestone, or plucked chicken skin appearance

osteopoikilosis and connective tissue nevi. It presents as yellow papules or plaques on the trunk and extremities, and increased skin elasticity. Musculoskeletal limitations are the most common symptom associated with dermatofibrosis lenticularis; however, ocular and gastrointestinal symptoms have also been reported.[1]

Dermatologic manifestations of familial and acquired hyperlipidemia include xanthomas that are deposits of lipids in the skin and subcutaneous tissue. Hyperlipidemia most commonly results in eruptive xanthomas, which are yellow papules or plaques on the knees, elbows, and buttocks. However, plane xanthomas that appear as yellow, raised plaques may also develop on the neck and trunk.[3]

Lichen simplex chronicus is caused by repetitive scratching and rubbing and is commonly associated with atopic dermatitis. It results in circumscribed plaques, typically on the neck, scalp, legs, arms, and anogenital region.[4]

REFERENCES

1. Dyer JA. Lipoid proteinosis and heritable disorders of connective tissue. In: Goldsmith LA, Fitzpatrick TB, eds. Fitzpatrick's Dermatology in General Medicine. 8th ed. New York, NY: McGraw Hill; 2012.
2. Fenske NA. Pseudoxanthoma elasticum. Updated October 20, 2015. http://emedicine.medscape.com/article/1074713-overview. Accessed March 17, 2016.
3. Usatine RP, Smith MA, Mayeaux EJ. Hyperlipidemia and xanthomas. In: Usatine R, ed. The Color Atlas of Family Medicine. 2nd ed. New York, NY: McGraw Hill; 2013.
4. Wolff K, Johnson RA, Saavedra AP. Lichen simplex chronicus (LSC). In: Wolff K, Johnson RA, Saavedra AP, Fitzpatrick TB, eds. Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology. 7th ed. New York, NY: McGraw Hill; 2013.

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Hypothermia

- Hypothermia: Core temperature <95°F.
- Mild hypothermia: Core temperature >90°F.
- Moderate hypothermia: Core temperature >82°F.
- Severe hypothermia: Core temperature <82°F.
- Irreversible hypothermia: Core temperature <57°F.
- CPR: Bring temperature to >82°F.
- Therapeutic hypothermia: Core body temperature maintained in the range of 32-34°C (90-93°F).

Pseudo-Ventricular Tachycardia in Parkinson's Disease

MONIKA MAHESHWARI*, SONAM†

ABSTRACT

We report herein a patient with Parkinson's disease whose electrocardiogram mimicked ventricular tachycardia due to Parkinson's tremors.

Keywords: Parkinson's disease, ventricular tachycardia

Artifact in electrocardiogram (ECG) caused by Parkinson's tremor can mimic wide complex ventricular tachycardia (VT) and give rise to unwarranted further investigations and clinical intervention.[1] Hence, the need of the hour is to increase awareness and training to avoid misdiagnosing these artifacts as potentially life-threatening cardiac arrhythmias. We report herein one such case of an elderly male with Parkinson's tremors.

CASE REPORT

A 76-year-old man was referred to the outdoor department for routine preoperative cardiac evaluation before undergoing prostatic surgery. His pulse was 100/min, and blood pressure 120/70 mmHg. His cardiovascular examination was unremarkable with normal heart sounds and no audible murmur. His central nervous system examination revealed resting tremors in fingers of upper limbs. He also had characteristic mask-like facies. On laboratory investigations, blood biochemistry was normal including serum electrolytes and thyroid function test. His 12-lead ECG revealed run of broad QRS complexes in multiple leads (Fig. 1). However, clinically hemodynamic stability of the patient raised suspicion of pseudo-VT. Further diagnostic clues for the ECG artifacts were presence of (1) intervening spike of 'R' waves of normal QRS, in midst of run of broad QRS complexes in Lead III, aVR, aVF and V1 and (2) normal width QRS with regular R-R interval in chest leads V2-V6 and Lead II. So, our patient did not undergo any cardiac intervention for this artifact simulating VT and was continued on anti-Parkinson's medication as per Neurologist's advice.

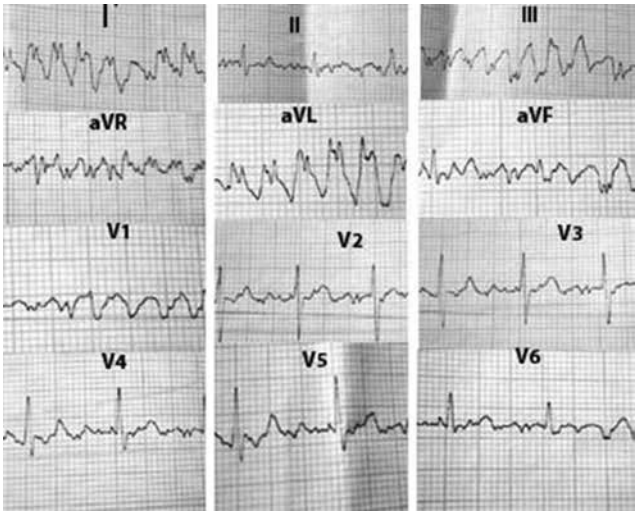


Figure 1. ECG showing broad QRS complexes in multiple leads.

DISCUSSION

The tremor of Parkinson's disease has been known to induce ECG artifacts resembling cardiac arrhythmias, simulating both atrial and ventricular tachyarrhythmias.[1,2] Knight et al[3] published an interesting case-series review on the clinical consequences of misdiagnosing ECG artifact as VT in 12 patients, of whom, 9 were asymptomatic at the time of the ECG recording. Llinas et al[4] reported a case of an elderly patient with Parkinson's who presented with a history of collapses. VT on her ECG was thought to be the cause but her falls were related to the postural

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instability associated with Parkinson's disease. Interestingly, patients with Parkinson's disease may also suffer from cardiovascular autonomic dysfunction,[5] which can cause QT prolongation and lead to ventricular arrhythmias and sudden death. Therefore, identifying ECG artifact masquerading as VT requires careful review of the temporal relation of body movement to the ECG recording, close scrutiny of the ECG tracing, especially looking for normal QRS complexes within the artifact, eliciting physical signs of atrioventricular dissociation such as variability of the jugular venous pulse amplitude or loudness of the first heart sound, as well as the use of transesophageal ECG recording for complex cases. This case also highlights the importance of assessing a 12-lead ECG instead of depending on single channel telemonitor to make the diagnosis. If this patient was on a single channel telemonitor/Holter monitor, misdiagnosis of VT would have been made, depending on the channel used. Tremor artifact is most prominent in limb leads and represents the action potentials of striated muscle.[6]

This case report emphasizes that treating doctor should remain vigilant and avoid unnecessary diagnostic and therapeutic interventions such as initiation of long-term antiarrhythmic and anticoagulant drugs, diagnostic cardiac catheterization and even implantation of permanent pacemakers or cardiac defibrillators in such pseudo-cardiac arrhythmias.

REFERENCES

1. Bhatia L, Turner DR. Parkinson's tremor mimicking ventricular tachycardia. Age Ageing. 2005;34(4):410-1.
2. Prabhavathi B, Ravindranath KS, Moorthy N, Manjunath CN. Pseudo-atrial flutter/fibrillation in Parkinson's disease. Indian Heart J. 2009;61(3):296-7.
3. Knight BP, Pelosi F, Michaud GF, Strickberger SA, Morady F. Clinical consequences of electrocardiographic artifact mimicking ventricular tachycardia. N Engl J Med. 1999;341(17):1270-4.
4. Llinas R, Henderson GV. Images in clinical medicine. Tremor as a cause of pseudo-ventricular tachycardia. N Engl J Med. 1999;341(17):1275.
5. Oka H, Mochio S, Sato H, Katayama K. Prolongation of QTc interval in patients with Parkinson's disease. Eur Neurol. 1997;37(3):186-9.
6. Robottom BJ, Weiner WJ. Teaching neuroImages: Rest tremor mimicking ventricular tachycardia. Neurology. 2010;75(23):2134.

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CHAT WITH DR KK

Woh to Theek Hai Par Mara Kyon?



Validation of Postnatal Care Health Data Reported Under Health Management Information System by the Primary Health Centers of Rural Vadodara, Gujarat

SANGITA V PATEL*, HARSH BAKSHI†, DHARA ZALAVADIYA‡, PRAKASH KOTECHA#

ABSTRACT

Background: Postnatal care (PNC) is a part of maternal and child health (MCH) and important for the good health of both mother and child. Therefore, the present study was conducted with the aim to study the PNC data reported by primary health center/subcenter (PHC/SC) and validate them at the village level and assess quality of care given. **Material and methods:** A sample of 20 PHCs, 13 rural and seven tribal, was selected using stratified random sampling. For every PHC, 2 SCs and for every SC, one village were selected. Data on PNC were collected from the PHC/SC records and validated by interviewing five beneficiaries from the village. **Results:** The district availability of PNC was 31.8%, while the overall accessibility was 52.2%. Adjusted utilization for the district was 74.7% for SBA and 14.7% for TBA. Effective coverage, adjusted for quality of care, for the district was 25.2%. **Conclusions:** The gap between the reported and validated data ranged from 15% to 51% of the reported.

Keywords: Postnatal care, validation, Health Management Information System, primary healthcare

India has adopted the concept of primary healthcare, as declared in Alma Ata Conference (1978), whereby the state provides healthcare to the population, through a network of primary health centers (PHCs) and subcentres (SCs). The community outreach services are provided by the SCs. Under the National Rural Health Mission (NRHM), every health facility is expected to formulate their local health plans based on their local health priorities. For planning, monitoring and evaluation purposes, the manager at the health facility needs data regarding population distribution, disease burden, beneficiaries for different health services and many others too. Health Management Information System (HMIS) was defined by the World Health Organization (WHO), at Conference on Health Information System, 1973 as, "a mechanism for the collection, processing, analysis and transmission of information required for organizing and operating health services, and also for research and training". HMIS, thus, is an information system that is especially designed to assist in the management and planning of all health programs. Poor information systems do not only fail to portray the real health situation, but are themselves barriers for scaling-up health services.

In any community, mothers and children constitute a priority group. They comprise, 71.14% of the population of the developing countries. In India also, women of childbearing age and children under 15 years of age comprise 57.5% of the total population. By virtue of sheer numbers only, they are the major consumers of healthcare services. They are also a vulnerable group, as far as health is concerned, and improving their health can significantly contribute to the health of the general population.

The time of highest risk of death is the same for mothers and for newborns—on the day of delivery and

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over the next few days after delivery. These data offer compelling evidence that integrated maternal and newborn postnatal care (PNC) during the first few days after delivery should be provided to all newborns and their mothers as a concerted strategy to improve survival of both. This exercise was carried out to assess and understand the status of PNC activities in Vadodara district of Gujarat by validating the records using the format and guidelines as proposed in the Border District Cluster Strategy (BDCS). The tool, based on John Hopkins's monitoring steps, was developed by the UNICEF to monitor minimum intervention package of Reproductive Child Health (RCH) activities in BDCS districts.

OBJECTIVES

- To study the data pertaining to PNC in terms of availability, accessibility, utilization, coverage reported, validate and compare them between tribal and non-tribal areas at the SC/village level.
- To assess the progress or low performance of the indicators and analyze the possible causes of major bottlenecks for effective coverage.
- To assess the quality of care being provided as evident from the technical competence of the health provider and client satisfaction.

MATERIAL AND METHODS

Study Area and Sampling

The district can be divided into tribal and non-tribal zones - Four talukas (blocks) form the east area, which is hilly and tribal; rest are a part of the plain of middle Gujarat. Sample size was selected based on consultation with UNICEF. The health indicators and other related parameters differ widely in tribal areas as compared to non-tribal areas. So, stratified sampling was done so as to proportionately select 20 PHCs with tribal: Non-tribal distribution of 1:1.7. Two separate lists were made, one for the PHCs in the tribal blocks and the other containing the PHCs in the non-tribal blocks. With the help of Epi-Info 6 - Version 6.04d software, 7 PHCs from tribal blocks and 13 PHCs from non-tribal blocks were randomly selected.

For each of the PHCs, 2 SCs were selected, one situated near and the other distant from the PHC. From each of the SC, 1 village was selected. Thus, this exercise was carried out in 20 PHCs, 40 SCs and 40 villages of Vadodara district (Rural). Validation exercise was then conducted in each of these villages where five beneficiaries were interviewed who got the PNC services.

Data Collection

Study was conducted between April 2009 and August 2009. Reference period for the study was taken from April 2008 to March 2009.

Data was collected in the prescribed formats for PHCs and SCs. It was checked for errors, entered and analyzed using Microsoft Excel software. District estimates for each of the interventions were then calculated using the monitoring tools described later. The guidelines used were the same as used by UNICEF for monitoring under the BDCS strategy. However, some modifications were made, incorporating the newer policy changes.

Tools for validation included: Availability, accessibility, utilization, adequate coverage and effective coverage.

Ethics

The study was approved by the Institutional Review Board Committee of the Institute.

Data Collection for Natal and Postnatal Care

Target Population

Cumulative number of deliveries conducted during the reference period in the PHC area was the target population. To calculate the target population, the formula used was:

$$\text{Target population} = \frac{\text{Crude birth rate (CBR)} \times \text{Population}}{1000}$$

Coverage Steps

Availability

This was defined as percentage of days disposable delivery kits (DDKs) were available in adequate quantity during the reference period. Stock register maintained at PHC provided the statement on date and quantity of items received and issued during the reference period. Based on stock register, availability was calculated as:

$$a) \quad \frac{\text{No. of days DDKs available}}{365} \times 100$$

In order to ensure clean delivery, DDKs are provided to the pregnant women and are expected to be used in case of home delivery. Therefore, proportion of home deliveries was taken in the denominator, while calculating the adequacy of DDKs. The district coverage for home delivery - 40%, was used for calculating adequacy.

$$b) \quad \frac{\text{Total number of DDKs available}}{\text{Target population} \times \text{proportion of home deliveries}} \times 100$$

Lower of these percentages was taken as the availability figure for the study PHC.

Validation at SC: Whether the female health worker/trained birth attendant (FHW/TBA) received DDKs as mentioned in the PHC stock register was checked and it was confirmed whether she was using it and/or gave them to TBAs/families.

Accessibility

Both skilled and trained birth attendants were considered separately. Even if FHW/FHS/MO (female health superviser/medical officer) were conducting deliveries, but not staying at the headquarter or vice-versa, accessibility was taken as zero.

$$\text{a) Accessibility for skilled birth attendant (SBA)} = \frac{\text{No. of SC/PHCs with FHW/LHV/MO residing in their area of posting and conduction on an average at least one delivery in a month}}{\text{Total number of PHC and SCs in the PHC area}} \times 100$$

$$\text{b) Accessibility for TBA} = \frac{\text{No. of villages with resident TBA and conduction of at least one delivery in alternate months}}{\text{Total number of villages}} \times 100$$

Validation at PHC, SC and village: In order to validate these data, the birth registers were checked for the deliveries, conducted by SBAs and TBAs.

Utilization

The initiation of the service is taken as the utilization. For intranatal care, utilization for SBAs was defined as percentage of deliveries attended by SBAs, i.e., MO/FHS/FHW at institution or at home. This included deliveries conducted at private hospitals/nursing homes by doctor or nurses.

$$\text{a) Utilization for SBA} = \frac{\text{Total number of deliveries conducted by auxiliary nurse midwife (ANM)/LHV/MO}}{\text{Target population}} \times 100$$

For TBA, utilization was defined as percentage of deliveries attended by TBAs.

$$\text{b) Utilization for TBA} = \frac{\text{Total number of deliveries conducted by TBAs}}{\text{Target population}} \times 100$$

This data was available at PHC from the RCH Form-7, which is collated from Form-6 of all the SCs.

Validation at SC and village: Form-6 of any month of the SC was taken. The data were validated as explained earlier. Client satisfaction was assessed as described for earlier indicators.

Adequate Coverage

It indicates the continuity and complete utilization of services. For intranatal care and PNC, adequate coverage was defined as the percentage of women delivered by skilled attendant, newborn-weighed within 48 hours and received at least three PNC within 10 days. The district estimate was calculated for each of these three indicators by averaging the values obtained for each PHC.

$$a) \quad \frac{\text{Cumulative number of women delivered by SBA}}{\text{Target population}} \times 100$$

$$b) \quad \frac{\text{Cumulative number of women received PNC 3}}{\text{Target population}} \times 100$$

$$c) \quad \frac{\text{Cumulative number of newborn weighed}}{\text{Target population}} \times 100$$

Validation at SC and village: Form-6 of any month of the SC was taken and the data validated in a similar fashion as explained earlier. Client satisfaction was also assessed.

Correction factors, thus calculated, were multiplied with the averaged estimates to give adjusted values for all the indicators. The lowest of the figures was taken as the district coverage.

Effective Coverage

It indicates the quality of services. For monitoring, effective coverage was defined as the percentage of pregnant women adequately covered by FHWs skilled to manage third stage of labor and gave basic newborn care. Depending upon her performance and knowledge, her skills were assessed. Correction factor for quality was calculated at the district level based on findings of all SCs.

Adjustment of District Estimates based on Validation Exercise

After the completion of monitoring and validation exercise in all the PHCs (or proportion of PHCs), district coverage was estimated and adjusted based on the PHC and SC data as explained in Table 1.

IJCP SUTRA 579: A 1% rise in bad cholesterol increases the chances of heart attack by 2% and 1% reduction in good HDL cholesterol reduces the chances of heart attack by 3%.

The formula for adjustment is:

Availability = Average of PHC availability

Accessibility = Average of SC accessibility

Adj. Utilization-SBA = Average of PHC Utilization-SBA × correction factor (CF) for SBA

Adj. Utilization-TBA = Average of PHC Utilization-TBA × correction factor for TBA

Adj. Adequate coverage = Minimum of (Average of PHC Coverage SBA/PNC3/Newborn weighed × correction factor for that indicator)

Effective coverage = Adj. Adequate coverage × CF for quality Natal and PNC services

RESULT

Natal and Postnatal Care

Availability

This is defined as percentage of days DDKs were available in adequate quantity during the reference period. Minimum of periodicity or adequacy was taken as availability for the PHC.

For DDKs, adequacy was higher than periodicity. Both were higher for non-tribal areas. The availability estimate form the district was 31.8%. It was higher for non-tribal areas (33.3%) as compared to tribal areas (28.5%) (Fig. 1).

Accessibility

Accessibility was taken as proportion of MO/FHS/FHW/TBA residing at the head quarter and conducting at least one delivery a month. It was assessed separately for SBA and TBA. The estimates for accessibility were as follows:

The district estimate for accessibility of SBA was 30.9%. The SBA accessibility was higher in non-tribal (33.2%) as compared to tribal areas (12.1%). The estimates of accessibility of TBA were higher than those for SBA. Accessibility of TBA for the district, tribal and non-tribal areas was 52.2%, 55.1% and 50.6%, respectively (Table 2).

Utilization

The initiation of the service was taken as the utilization. For intranatal care, utilization for SBA was defined as percentage of deliveries attended by SBAs, i.e., MO/FHS/FHW at institution or at home. This also included deliveries conducted at private hospitals/nursing homes by doctor or nurses. For

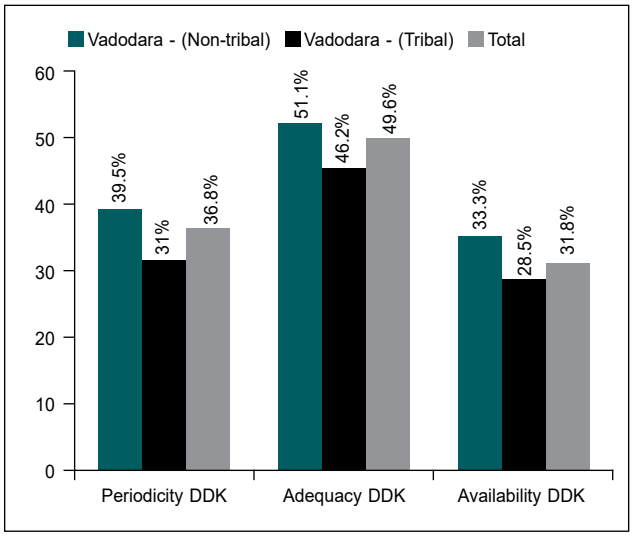


Figure 1. Periodicity, adequacy and availability of DDKs.

Table 1. District Summary Sheet for Adjustment

	SC_1				SC_2				SC_k				Total				Correction factor
Accessibility for delivery and PNC	Z_1				Z_2				Z_k				Average (Z_1, Z_2, ...Z_k)				
Intervention	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**	**A**	**B**	**C**	**D**	**Sum A**	**Sum B**	**Sum C**	**Sum D**	**(Sum D x Sum B) (Sum C x Sum A)**
Delivered by SBA																	
Delivery by TBA																	
PNC3 within 10 days																	
Birth weight within 48 hours																	
FHW manage third stage of labor properly and give basic newborn care	S_1				S_2				S_k				Average (S_1, S_2,...S_k)				Avg (S_1, S_2,...S_k)

TBA, utilization is defined as percentage of deliveries attended by TBAs. The estimate of utilization of SBA, based on the reported data, for the district, tribal and non-tribal areas was 87.9%, 86.5% and 88.6%, respectively. The estimate of utilization of TBA, based on the reported data, for the district, tribal and non-tribal areas was 14.7%, 18.8% and 12.6%, respectively.

Following validation, 85% of the data was validated for deliveries conducted by SBA. Proportion validated was similar in both tribal and non-tribal areas. For, the deliveries conducted by TBA, 100% validation was considered. Accordingly, the adjusted estimates thus obtained, for SBA were: District (74.7%), non-tribal (75.4%) and tribal (72.7%); and for TBA were: District (14.7%), non-tribal (12.6%) and tribal (18.8%) (Table 3).

Table 2. Accessibility of SBA and TBA

Region	Accessibility (in %) - SBA	Accessibility (in %) - TBA
Vadodara (Non-tribal)	33.2	50.6
Vadodara (Tribal)	12.1	55.1
Vadodara	30.9	52.2

Adequate Coverage

It indicates the continuity and complete utilization of services. For intranatal care and PNC, adequate coverage was defined as minimum of the percentage of women delivered by skilled attendant, newborn-weighed within 48 hours and received at least three PNC within 10 days. PHC coverage was estimated based on the reported data. District estimates were calculated by averaging the PHC coverage for all the three indicators. Depending upon the extent to which the reported data was validated, a CF was calculated. Adequate coverage estimated was multiplied with this CF to obtain adjusted adequate coverage. Minimum of the four adjusted coverage was taken as the district estimate. Minimum adjusted coverage for the district, tribal and non-tribal areas was that of PNC3. Adjusted adequate coverage for the district was 37%. The coverage for non-tribal and tribal areas was 38.2% and 33.8%, respectively (Table 4 and Fig. 2).

Effective Coverage

It indicates the quality of services. Effective coverage was defined as the percentage of pregnant women adequately covered by FHWs skilled to manage third stage of labor and gave basic newborn care. The skill assessment showed that FHWs of

Table 3. Utilization and Adjusted Utilization for SBA and TBA

Region	Utilization (in %) - SBA	Correction factor	Adj. utilization (in %) - SBA	Utilization (in %) - TBA	Correction factor	Adj. utilization (in %) - TBA
Vadodara (Non-tribal)	88.6	0.85	75.4	12.6	1	12.6
Vadodara (Tribal)	86.5	0.84	72.7	18.8	1	18.8
Vadodara	87.9	0.85	74.7	14.7	1	14.7

Table 4. Adequate and Adjusted Coverage of Components of Natal and Postnatal Care

Region	PNC3 coverage (%)	CF	Adj. PNC3 coverage (%)	Newborn weighed (%)	CF	Adj. newborn weighed coverage (%)	Adj. coverage SBA (%)
Vadodara (Non-tribal)	74.1	0.52	38.2	92.4	0.58	53.8	75.4
Vadodara (Tribal)	78.3	0.43	33.8	97.3	0.55	53.1	72.7
Vadodara	75.6	0.49	37	94.1	0.57	53.6	74.7

Table 5. Adjusted and Effective Coverage for Natal and Postnatal Care

Region	Adj. adequate coverage (%)	Correction factor	Effective coverage (%)
Vadodara (Non-tribal)	38.2	0.71	27.2
Vadodara (Tribal)	33.8	0.63	21.3
Vadodara	37	0.68	25.2

IJCP SUTRA 581: Avoid exertion or activities like running, jogging in conditions of smog.

non-tribal areas scored better than those of the tribal areas. Effective coverage for the district, non-tribal and tribal areas was 25.2%, 27.2% and 21.3%, respectively (Table 5 and Fig. 3). Most of the beneficiaries were satisfied with the services provided.

DISCUSSION

It is well-established that giving birth in a medical institution under the care and supervision of trained healthcare providers promotes child survival and reduces the risk of maternal mortality.

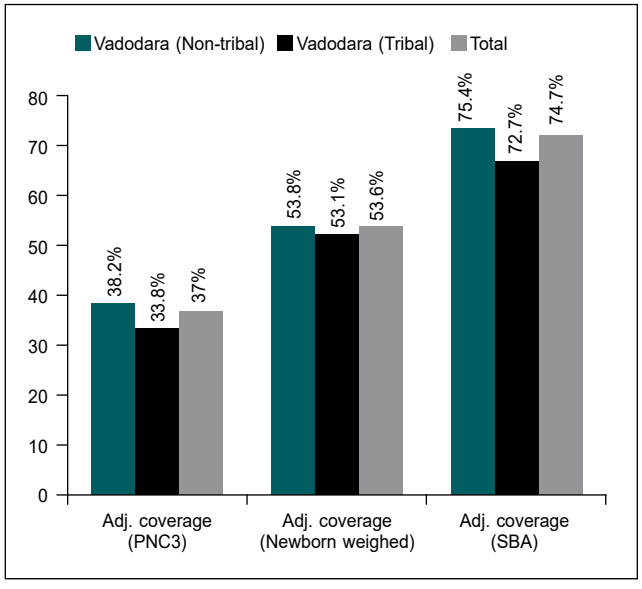


Figure 2. Adjusted coverage for PNC3, newborn weighed and SBA.

Despite the many benefits associated with institutional delivery, India's maternal and child health programs have not aggressively promoted institutional deliveries, except in high-risk cases. Evidence from Bangladesh indicates the majority of maternal deaths occur between the third trimester and the end of the first week after pregnancy.

Safe deliveries, which are greatly reflected by births attended by skilled personnel, though increasing, are still much below the desired level. NFHS II estimates that the proportion of births attended by skilled health personnel was 42% during 1998-99, an increase from 33% during NFHS I (1992-92).

The proportion of births attended by skilled health personnel in rural areas of India is only 31.1%. The institutional deliveries amount to 39.1%. Gujarat estimates were better than the national estimates at 42.2% and 54.6%, respectively.

Institutional deliveries increased across the district but the improvement was lower than the national average. In Vadodara, on the contrary, proportion of institutional deliveries is on the decline. A similar study was carried out in Surat, which showed that the adequacy for DDKs was lower (33.9%) as compared to our study (49.6%). The accessibility for SBA and TBA in that study was 38.9% and 56.1%, which were similar to our estimate of 30.9% and 52.2%, respectively.

The adjusted utilization for SBA and TBA were found to be 9.9% and 30.7%, while those in our study were observed to be 74.7% and 14.7%, respectively. Adjusted

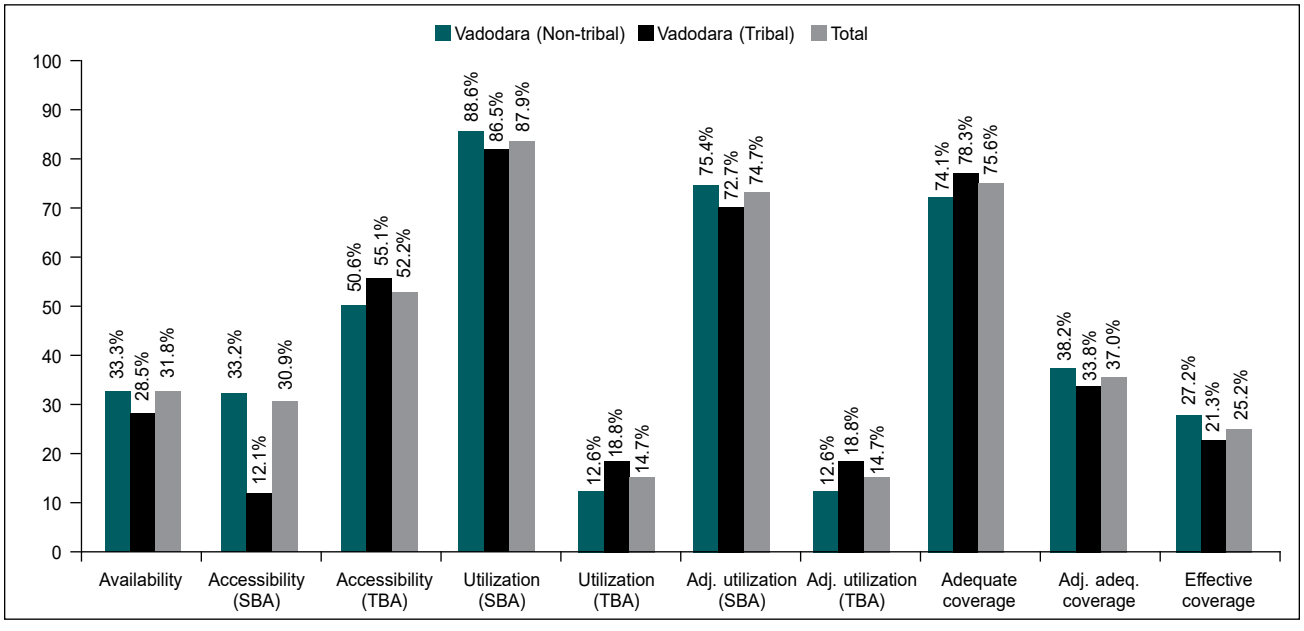


Figure 3. Natal and postnatal care - all indicators.

adequate coverage was estimated at 10.3% against our finding of 37%. Effective coverage was 6% against our estimate of 25.2%. Another study carried out by Patel et al regarding data validation of vitamin A and data validation of immunization data were also shown the over reporting of the data.

Availability

The data regarding the DDK stocks was not available from 4 (2 tribal and 2 non-tribal) of the 20 PHCs. The overall periodicity and adequacy were both low and showed wide variations. Availability, though higher for the non-tribal areas, was accompanied with a wider variation.

Some of the reasons for the low availability were:

- Stock keeping of DDK kits was not there at many places
- Those issued were immediately distributed to the SC. Hence, there was nil stock for many months
- The kits are never distributed to the mothers. Whenever required, the TBA takes the kits for delivery. FHW may also use them fully or components thereof as per her needs.
- Although stock was found to be inadequate/absent at few places, the MOs opined that these kits were always available in plenty, wherever and whenever required
- At a few centers, some kits beyond the expiry date were also noted.

Accessibility

The overall accessibility for SBA was low. It was lower in tribal areas as compared to the non-tribal, whereas the converse was true regarding the accessibility for the TBA.

Some Observations

- As observed, the accessibility was very low for SBA. The reason being that in spite of 60% of institutional deliveries, the FHW or MO were not staying at the center. Thirty percent of the posts of FHW were vacant. Also, the post of MO was vacant at 25% of the selected PHCs (2 in non-tribal and 3 in tribal). This is an issue of deep concern, known to all.
- The issue was more acute in tribal areas where very few posts (FHS, FHW, MPW-M, LT, Pharmacist) were filled. Forty-one percent posts for FHW and 45% posts of MO were vacant. Consequently, there was a wide variation across the PHCs leading to a wide CI.
- Of the filled posts, very few MO (25%) and FHW (30%) were staying at the headquarter. Some of the reasons cited for not staying at the Headquarters:
  - No subcenter building/livable quarters
  - No good/English medium schools in the village for Child's education (most common)
  - Salary not enough/No incentives to sacrifice the comforts of city life.
- The accessibility for TBA was around 50%. When asked, most of the MOs said that there was at least 1 TBA per village. However, the details regarding her training were often not clear and the same could not be validated. Also, many did not conduct one delivery every alternate month. The main focus now is on convincing the mothers for institutional deliveries.

When asked, why the HW did not stay at the HQ, one of them said, my son is in 11th. There are no higher secondary schools in the village. Where will I get tuitions for him in this village… we are asked to stay in the village, but they don't provide any facilities.

Utilization

The utilization for SBA was same for both tribal as well as non-tribal areas, while that of TBA was higher in tribal areas. There were almost no deliveries at the SC. The FHW at the SC used to deliver the child at the PHC premises only.

The overall number of deliveries conducted across the district was higher than the target. Two of the PHCs had much higher number of deliveries (125% of target) than expected as per the target population. Utilization calculated after omitting that data showed very little difference. The deliveries conducted by SBA are thus higher than the district estimate of 60% for the previous year. Institutional deliveries are increasing, but the difference between the two figures is best explained by two different targets selected. Eighty-five percent of the reported data could be validated.

Variability was higher for TBA utilization as few places recorded over 90% institutional deliveries and consequently very low TBA utilization.

Some Observations

- In some cases of deliveries by SBA, it was observed that the mother was delivered at institution, but not by the FHW, as claimed by her.
- Sometimes though the delivery was conducted by the TBA, it was counted as an institutional delivery conducted by a SBA.

- One of the reasons for lower TBA utilization is focus on institutional deliveries. Lots of factors have improved rates of institutional deliveries. Even the TBAs dissuade home deliveries. Their primary role now is to motivate and escort for institutional delivery.

One of the MOs explained: "…nowadays, we don't ask TBA to conduct deliveries…. the TBA are now assigned the responsibility of motivating the clients for institutional delivery and escorting them. The deliveries conducted by them have significantly gone down. Lot of women now prefer institutional deliveries..."

Adequate Coverage

The coverage values for PNC3 were the minimum. Only 49% of the reported data for PNC3 could be validated. Adjusted coverage was slightly better in non-tribal areas as compared to tribal.

Some Observations

- Low-adjusted rates were due to false reporting. One of the MOs justified, off the record, that March is the month where we have to set data to reach anywhere near to the given targets and hence there is a higher degree of false reporting.
- If the parents knew the weight of the child, then the FHW would enter it as newborn weighed within 48 hours, without even weighing the child herself.
- All births taking place in institution were taken as newborn weighed in 48 hours.
- Also almost all women, especially those delivered at some institution were taken as having given three PNC. The first visit, in such cases, was considered done. At the most, one more visit was paid to these women but rarely three.

One FHW, regarding recording of newborns weighed in 48 hours, said: "all those delivered at institutions are always weighed. Hence, we take all institutional deliveries as newborn weighed in 48 hours."

Effective Coverage

Over an assessment score of 10, the observed quality of care for natal and post-natal services was rated at 6.8, full quality being 10. This, too, was slightly better for the non-tribal areas. Some of the observations made when FHWs skills were assessed:

- All knew the minimum number of visits required, but a few (12.5%) were unable to give correct information for the schedule in case the newborn was underweight
- Few (12.5%) did not weigh the child during post-natal visits
- Most (87.5%) did not know the things to look for, during the postnatal visit
- Many (75%) did not counsel the mothers regarding hygiene and nutrition during the visits
- Regarding essential newborn care (ENBC), all knew about the basic CLEANS. Many (87.5%) did not know the correct order/method of resuscitation to be taken during delivery.

CONCLUSION

- The gap between the reported and validated data ranged from 15% to 51% of the reported, for various indicators.
- PHCs in non-tribal area performed better on all the indicators except those for SC clinic, where the reason could have been vacant posts of MO that lead to greater utilization of FHW for curative services.
- The posts of various health workers are vacant across all the PHCs. The problem is more severe in tribal areas as compared to non-tribal areas. This shortage has affected service availability, accessibility, utilization and coverage. Stock keeping and data recording are affected the most.
- FHW are entrusted with added responsibilities of fund management and various activities not related to healthcare. This has been given as one of the reasons, by the FHWs, for lack of focus on proper service delivery and quality care.
- During assessment of quality of care, the FHW were found to be lacking in skills for multiple elements. Many of the errors and irregularities of the FHWs were being perpetuated due to lack of monitoring and supervision of the superiors.
- Very few health providers are staying at the HQ. To some extent, this is due to lack of infrastructure, facilities and incentives.

Acknowledgment

We would like to acknowledge the UNICEF for giving training on data validation of MCH data.

SUGGESTED READING

1. Information for action, HMIS, New Delhi. NHSRC (National Health System Resource Centre), 2008.
2. HMIS Tool Kit, New Delhi. NHSRC (National Health System Resource Centre), 2008.

3. K Park. Textbook of Preventive and Social Medicine, 20th Edition, Bhanot Publications.
4. Papania M, Rodewald L. For better immunisation coverage, measure coverage better. Lancet. 2006;367(9515):965-6.
5. Rao KM. Utilization of reproductive and child health services in tribal areas of Andhra Pradesh. Tribes and Tribals. 2008;2:35-41.
6. Concept paper and proposed strategy for reproductive and child health project in Tribal Areas. Department of Family Welfare Training Division, Govt. of India, October 2000.
7. Monitoring Guideline for Minimum Intervention Package, Interstate Border District Cluster Strategy. UNICEF, June, 2004.
8. Ronsmans C, Graham WJ; Lancet Maternal Survival Series steering group. Maternal mortality: who, when, where, and why. Lancet. 2006;368(9542):1189-200.
9. National Family Health Survey (NFHS-2), 1998-1999. International Institute for Population Sciences (IIPS) and Macro International, India: Mumbai: IIPS; 2000.
10. National Family Health Survey (NFHS-3), 2005-06. International Institute for Population Sciences (IIPS) and Macro International, India: Mumbai: IIPS; 2007.
11. District Level Household and Facility Survey under Reproductive & Child Health Project (DLHS-3) District factsheet Vadodara, Gujarat, India. International Institute for Population Sciences (IIPS), 2007-08.
12. A report on Strengthening of Minimum Intervention Package (MIP) of RCH activities in Surat district. Dept. of Community Medicine, Government Medical College, Surat, December 2006.
13. Patel SV, Bakshi HN, Mazumdar VS, Popat CN, Kotecha PV, Dave MG. Validation of the vitamin A supplementation data reported under Health Management Information System by the Primary Health Centres of rural Vadodara. Res Rev J Immunol. 2014;4(2).
14. Patel SV, Bakshi HN, Mazumdar VS, Kotecha PV. Validation of the immunization data reported under Health Management Information System by the Primary Health Centres of rural Vadodara. J Health Manage. 2015;17(2):154-62.

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Micronutrient Bridge in Infectious Diseases and Its Immunological Role

SHANMUGAM A

ABSTRACT

Nutrition plays an important role in child health. Nutrition is an exogenous factor which plays a vital role in metabolism and growth. Micronutrients are the nutrients, which help promote the immunological function and help in maturation and proliferation of T-cells and B-cells. Here, we review the role of micronutrients in infectious diseases and their essentiality towards the concept of immunology.

Keywords: Nutrition, micronutrients, immunity, immunology

Nutrition plays an important role in child health. Nutrition is an exogenous factor which plays a vital role in metabolism and growth. Micronutrients are the nutrients which help promote the immunological function and help in maturation and proliferation of T-cells and B-cells. There are certain micronutrients, like iron, folic acid, vitamin A and vitamin B complex, copper and selenium that help in the maturation of T-cells and B-cells, which, in turn, increases the antibody response to fight against infections. The risk of common diseases and death is due to deficiency and depletions of micronutrients in the diet. So, each and every micronutrient has recommended dietary allowances (RDA) per weight in kilogram which is standardized by the World Health Organization (WHO). The appropriate RDA value of micronutrients should be given to the child to increase the immunity and phagocytic activity. According to the UNICEF, micronutrients are the nutrients which are not only responsible for physical growth and immune cell function but they also cater to the hormonal metabolism, biochemical mediators and sexual maturation. Micronutrient deficiency can cause serious health problems, such as reduced resistance to infectious diseases that can lead to death and mental retardation. Children with subclinical deficiencies of micronutrients and under nutrition are prone to day-to-day infections, leading to death. This paper reviews the role of micronutrients in infectious diseases and their essentiality towards the concept of immunology.

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ROLE OF MICRONUTRIENTS IN IMMUNE RESPONSES

Iron

Iron is the one of major micronutrients which plays a vital role in the human body for oxidation-reduction reactions. It is a component of oxygen carrying compounds hemoglobin and myoglobin. Iron deficiency serves as a cause of threatened infectious diseases. If iron deficiency is not corrected, it leads to anemia. More than 2 billion people are affected with iron deficiency. Iron deficiency anemia is common in the following situations:

- Social disadvantages such as poverty, poor housing and lower level of parental education
- Psychological disadvantage - It is due to insufficiency of iron and heme concentration in the blood, which leads to neurological lack of stimulation
- Biological disadvantage - There are certain situations where the biological disease leads to low birth weight, high infection rates and other nutritional deficiencies.

Iron deficiency is known to alter the emotional state of infants. Iron and folic acid can be obtained by consuming green leafy vegetables. Traditional food practices such as fermentation can improve the availability of iron in the diet. Deworming and breastfeeding will decrease iron deficiency anemia. Environmental sanitation plays a vital role in reducing the risk of infection.

Iron plays a vital role in the T-cell development which also generates some reactive oxygen and free radicals to kill the pathogens. The recommended supplementation of iron is 7-8 mg daily to overcome infections and leads to exaggerated immunity.

Zinc

Zinc is a vital nutrient. Zinc plays a key role in human metabolism and perpetuation of genetic materials for the enhancement of central dogma of molecular biology, which includes translation of ribonucleic acid (RNA) and transcription of proteins. The major source of zinc is through diet to enhance the immune function of the human body. Zinc is an important constituent of metalloenzymes and plays an important role in the synthesis of deoxyribonucleic acid (DNA) and RNA.

Zinc acts as a cofactor and enhancer for cell replication and intestinal mucosal cells regeneration. It is essential for wound healing and for epithelial cells turnover to maintain healthy skin. Zinc deficient children are prone to infections and cellular tissue damage. Zinc deficiency leads to regression of gene expression, alters the immunity level in the host, alters maturation and gonads development and pregnacy outcomes. Diarrhea is associated with increased amount of zinc excreted in feces. Dietary deficiency is common since the bioavailability of zinc is reduced by the co-existence of fiber and phytate in foods of vegetable origin. Zinc is an enhancer of T-cell production and subtypes switch. It stimulates the complement system leading to enhancement of both pathways of complement activation. Zinc plays a role in phagocytosis which leads to reduction in the risk of pneumonia, common cold symptoms and reduction in infectious diseases.

Selenium

Selenium is a mineral for the stimulation of antibodies. It is an antioxidant mineral. Selenium is incorporated into protein to make selenoproteins. These are important antioxidant enzymes called glutathione peroxidase. Antioxidants like vitamin C and E help to prevent cardiovascular disease, age-related disease, skin aging, ocular illness and cancer. Selenium is a good immune stimulant for several viral infections. Deficiency of selenium leads to loss of antioxidant host defense and decreased function of white blood cells and natural killer cell function.

Vitamin A

The deficiency of vitamin A leads to the development of impaired resistance to infection and diminished function of innate immunity along with loss of B- and T-cells.

Vitamin B Complex

Vitamin B1, otherwise called as thiamine, and vitamin B2, aid in antibody response. Vitamin B3 (niacin) and B5 (pantothenic acid) play a vital role in the production and release of antibodies. Pyridoxine helps in T- and B-cell production and maturation whereas biotin and folic acid help in the production and maturation of T-cells, which mediate the humoral immune response of the body. Cyanocobalamin increases the production and promotion of NK-cell activity and aids in T- and B-cell production.

Vitamin C

Vitamin C is an antioxidant which protects the cells from redox stress to control the infection. It has an antiviral activity which aids in the symptoms of common cold. Vitamin C improves innate and adaptive immune function. Vitamin C leads to collagen synthesis and it tends to help in the increase of free radical production.

Vitamin D

Vitamin D plays a vital role in the phagocytic activity, and inflammatory responses, which are promoted by specific T-cell subtypes. It is also important in wound healing process.

Vitamin E

Vitamin E deficiency - Immune issues: loss of phagocytic response and B-cell dysfunction. Vitamin E deficiency causes difficulty in controlling viral infection.

CONCLUSION

Micronutrients are very important for the growth and metabolism in child health and increase the immune function against infectious diseases. Each and every micronutrient should be supplemented by RDA and WHO guidelines. Nutrients supplementation improves the physical and immunological growth in children and adults. Healthy children ensure the optimal resource development of a country.

SUGGESTED READING

1. Draper A. Child Development and Iron Deficiency. The Oxford Brief. 1996.
2. Beck MA, Levander OA, Handy J. Selenium deficiency and viral infection. J Nutr. 2003;133(5 Suppl 1):1463S-7S.

3. Oryzeil FN, Alo IS, Tinorgah A (2003). Micronutrient deficiency control and child survival in Nigeria. In: Akinyele IO, Onimawo IA, Uwaegbute AC (Eds.). Child Survival and the Rights to Adequate Nutrition. Proceedings of the 34th Conference and Scientific Meeting of Nutrition Society of Nigeria. Held at Michael Okpara University of Agriculture, Umudike, Abia State; November 26th–29th 2003.
4. Penny M. The role of zinc in child health. Published by International Zinc Association; 2004. Available at: http://www.zinctaskforce.org/wp-content/uploads/2011/06/Penny_The-role-of-zinc-in-child-health.pdf.
5. Singh M. Role of micronutrients for physical growth and mental development. Indian J Pediatr. 2004; 71(1):59-62.
6. Traber MG, Packer L. Vitamin E: beyond antioxidant function. Am J Clin Nutr. 1995;62(6 Suppl):1501S-1509S.
7. UNICEF. Focus on Nutrition: The State of the World's Children. 1998.
8. Bruns H, Meinken C, Schauenberg P, Härter G, Kern P, Modlin RL, et al. Anti-TNF immunotherapy reduces CD8+ T cell-mediated antimicrobial activity against *Mycobacterium tuberculosis* in humans. J Clin Invest. 2009;119(5):1167-77.
9. Chasapis CT, Loutsidou AC, Spiliopoulou CA, Stefanidou ME. Zinc and human health: an update. Arch Toxicol. 2012;86(4):521-34.
10. Fairweather-Tait SJ, Bao Y, Broadley MR, Collings R, Ford D, Hesketh JE, et al. Selenium in human health and disease. Antioxid Redox Signal. 2011;14(7):1337-83.

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Blood Press Monit. 2005;10(4):207-13.

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*Laryngopharyngeal/ Gastro-oesophageal reflux Disease
RTI : Respiratory Tract Infection

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Erythroderma: Epidemiology, Clinical Profile and Clinicopathological Correlation in 47 Patients

US AGARWAL*, ANSHUL MAHESHWARI†, SUNIL KOTHIWALA‡, KARUNA GUPTA#, ARPITA JINDAL#

ABSTRACT

Background: Erythroderma, or generalized exfoliative dermatitis, is a disease characterized by erythema and scaling of greater than 90% of the body's surface. There is paucity of Indian studies over the etiology, clinical profile and its histopathological correlation. **Aims and objectives:** To assess the demographic profile, clinical features and histopathological correlation in erythroderma patients. **Material and methods:** We registered all patients of erythroderma consecutively from January 2013 to December 2013. After a thorough history and clinical examination, a provisional clinical diagnosis was made. We performed biopsy from two representative sites of patient and it was sent for histopathological examination. The slides were examined by two pathologists and one dermatologist without any relevant clinical information. The clinical diagnosis was matched with the blinded microscopical diagnosis. **Results:** The mean age of onset was 54.1 years with a male-to-female ratio of 3.3:1. The most common causes were airborne contact dermatitis (53.2%) followed by psoriasis (21.2%), drug-induced erythroderma (12.7%), chronic actinic dermatitis (2.1%), atopic dermatitis (2.1%), endogenous dermatitis (2.1%), mycosis fungoides (2.1%), lichenoid dermatitis (2.1%) and idiopathic (2.1%). Histopathology was able to provide diagnosis in 32 (68%) patients. Out of these 32 patients, microscopical diagnosis was in accordance with clinical diagnosis in 28 patients. **Conclusion:** Most of the clinical features of erythroderma are overlapping. Specific and diagnostic features of disease are seen only in a few patients. Repeated evaluations, close follow-up and skin biopsy are recommended for a better clinical diagnosis and patient care.

Keywords: Erythroderma, generalized exfoliative dermatitis, erythema, biopsy, histopathological examination

Erythroderma or exfoliative dermatitis is an inflammatory disorder in which erythema and scaling occur in a generalized distribution involving more than 90% of the body surface. Because most patients are elderly and skin involvement is widespread, the disease implies an important risk to the life of the patient. The estimated annual incidence of erythroderma seems to be 1-2/1,00,000 patients. This disorder may represent a variety of cutaneous and systemic diseases, and therefore a thorough work-up is essential, which includes detailed history of triggering factors like drugs, occupation, sunlight exposure, pre-existing dermatoses, infections, malignancies, etc. It should be followed by a meticulous clinical examination for specific diagnostic clues to rule out its etiology. Histopathology can help in identifying the cause of erythroderma in up to 50% of cases, particularly by multiple skin biopsies.

Indian studies showed a higher prevalence of erythroderma than other studies. Sehgal and Srivastava recorded the incidence of erythroderma from the Indian subcontinent as 35/1,00,000 dermatologic outpatients. But, there are conflicting views over role of histopathology as some studies were unrewarding.

This study was performed to find out the causes of erythroderma in north-west part of India, to find out the epidemiological, clinical profile of these patients and histopathological correlation.

MATERIAL AND METHODS

The study was performed from January 2013 to December 2013. In this tenure, all cases of erythroderma attending skin outpatient department were included in the study. A thorough history which included duration, progression of disease, occupation,

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seasonal variation, precipitating factors, site of onset, other existing skin disease and other comorbidities like hypertension, atopy, etc. was taken from patient. It was followed by a thorough general physical and dermatological examination. Laboratory investigations such as complete hemogram, blood glucose, blood urea, serum creatinine, liver function tests, serum electrolytes and chest radiograph were performed. Abdominal ultrasound, peripheral smear, fine needle aspiration cytology (FNAC) of lymph nodes, CT scan, etc. were done only if required.

Four millimeter punch biopsy was performed in all patients from two representative sites. The slides were seen independently by two pathologists and dermatologist without relevant clinical information. Slides were examined by them independently for any specific diagnosis. The microscopical diagnosis was then correlated with clinical diagnosis.

RESULTS

Age of patients ranged from 14 to 86 years with median of 58 years and mean age of onset of 54.1 ± 17.8 years. Majority of patients belonged to age group of 51-60 years (Fig. 1). Male predominance was seen with male-to-female ratio of 3.3:1. The total duration of erythroderma in patients ranged from 10 days to 20 years with median of 2 years and mean of 4.1 ± 5.2 years. Exacerbation of disease ranged from 7 to 120 days with a mean of 43.3 ± 25.3 days. Majority of male patients were farmers (55.5%) followed by laborers (22.2%) and students (6.3%). Majority of female patients were housemakers (72.7%) (Table 1).

Most common aggravating factor was seasonal exacerbation seen in about 26 patients (55.3%) with summer exacerbation in 17 patients (36.1%). Seasons had no effects on disease in 21 patients (44.7%). History of atopy was present in 11 (23.4%) patients. Other aggravating factors were sunlight and dust, which were seen in 11 (23.4%) patients each. Drugs were responsible in 4 (8.5%) patients. History of pre-existing skin disease was present in 30 patients (63.8%). Other comorbidities, like hypertension was present in 17 patients (36.1%), diabetes in 4 patients (8.5%) and tuberculosis in 4 patients (8.5%). In 17 patients of hypertension, nine were already on antihypertensive medicine but 8 patients were diagnosed with hypertension for the first time. The site of onset of erythroderma was scalp and face in 20 patients (42.6%), extremities in 18 patients (38.3%), and trunk and abdomen in 8 patients (17.0%). Most common clinical finding was pruritus (100%) followed by lymphadenopathy (70.2%), edema (57.4%), nail changes (55.3%), fever (38.2%), palmoplantar keratoderma (21.2%), weight loss (14.9%) and loss of appetite (10.6%) (Table 2). Severe pruritus causing disturbance in sleep was present in 29 (61.7%) patients. Inguinal lymphadenopathy was present in 33 (70.2%) patients and axillary lymphadenopathy in one patient. Most common nail change was Beau's line followed by shiny nails, yellowish discoloration of nails, subungual hyperkeratosis, pitting and onycholysis. In 3 (6.3%) patients, 20 nail dystrophy was present. Pitting edema of the distal extremities was present in 21 (44.7%) patients. Generalized edema of pitting type was present in 4 (8.5%) patients. Histopathology was able to provide specific histopathological diagnosis e.g., psoriasis, dermatitis in 32 (68%) patients. Out of these 32 patients, clinical correlation occurred in 28 (87%) patients. Overall, in 28 (60%) patients, clinical diagnosis matched with histopathological diagnosis. Table 3 summarizes the clinicopathological correlation. Nonspecific biopsy was seen in 15 (32%) patients. Histopathology was most accurate in diagnosing drug reaction (100%), followed by mycosis fungoides (100%) and psoriasis (70%) (Fig. 2). The specific findings of biopsies are depicted in Table 4. The most common causes were airborne

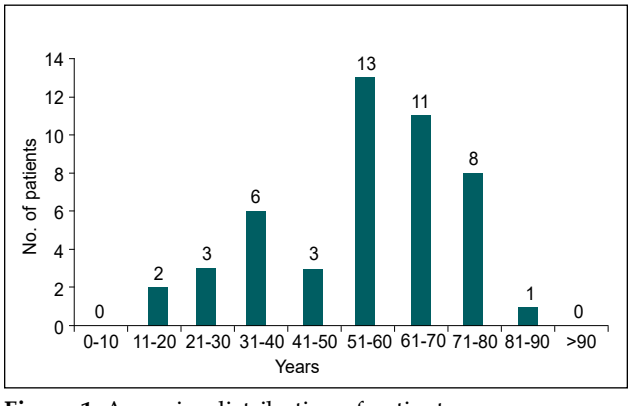


Figure 1. Age-wise distribution of patients.

Table 1. Occupational Profile of Patients

Occupation	No. of males	No. of females
Farmer	20	-
Laborer	8	-
Student	3	2
Housemaker	-	8
Carpenter	1	-
Sarpanch	1	-
Service	2	1
Army officer	1	-

Table 2. Clinical Profile of Patients

Symptom/disease	Airborne contact dermatitis (n = 25)	Psoriasis (n = 10)	Drug-induced erythroderma (n = 6)	Mycosis fungoides (n = 1)	Other (n = 5)
Pruritus	25	10	6	1	5
Fever	7	8	3	0	0
Loss of appetite	3	1	0	1	0
Weight loss	4	1	0	1	1
Edema	15	6	3	0	3
Lymphadenopathy	18	9	3	1	2
Nail changes	15	9	0	0	2
Palmoplantar keratoderma	4	6	0	0	0
Hypertension	14 6 ND	1 ND	1		1ND
Diabetes	3	0	0	0	1

ND: Newly diagnosed case.

Table 3. Clinicopathological Correlation

Clinical diagnosis	Histopathological diagnosis	Clinicopathological correlation
Airborne contact dermatitis (n= 25)	Dermatitis (n = 10) Psoriasis (n = 3) Nonspecific (n = 12)	40%
Psoriasis (n = 10)	Psoriasis (n = 7) Dermatitis (n = 1) Nonspecific (n = 2)	70%
Drug-induced erythroderma (n = 6)	Drug-induced (n = 6)	100%
Chronic actinic dermatitis (n = 1)	Dermatitis (n = 1)	100%
Endogenous dermatitis (n = 1)	Dermatitis (n = 1)	100%
Atopic dermatitis (n = 1)	Dermatitis (n = 1)	100%
Mycosis fungoides (n = 1)	Mycosis fungoides (n = 1)	100%
Lichenoid dermatitis (n = 1)	Lichenoid dermatitis (n = 1)	100%
Idiopathic (n = 1)	Nonspecific (n = 1)	-

contact dermatitis (53.2%) followed by psoriasis (21.2%), drug-induced erythroderma (12.7%), chronic actinic dermatitis (2.1%), atopic dermatitis (2.1%), endogenous dermatitis (2.1%), mycosis fungoides (2.1%), lichenoid dermatitis (2.1%) and idiopathic (2.1%) (Fig. 3).

DISCUSSION

The approach to patients with erythroderma depends on their previous dermatologic background. Patients with pre-existing dermatoses are easy to diagnose. Otherwise, erythroderma remains a diagnostic challenge, especially in those patients without history of dermatologic diseases and who deny having recently taken any medications.

In our study, age of patients ranged from 14 to 86 years with mean age of onset of 54.1 ± 17.8 years. This is in accordance with various previous studies. In this series, men outnumbered women in a ratio of 3.3:1. Similar findings were seen in other studies. In a study by Hulmani et al, male-to-female ratio was quite high at 14:1. As men are commonly involved than women

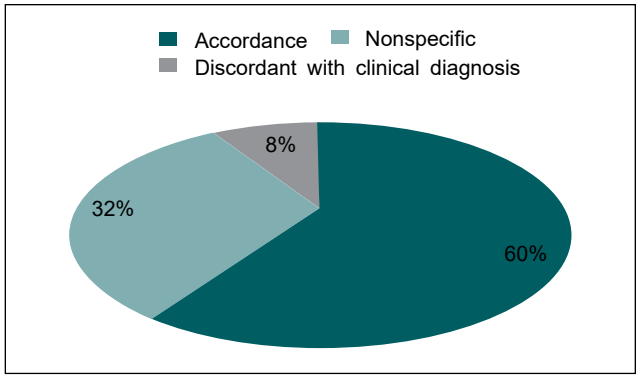


Figure 2. Clinical and histopathological diagnosis.

Table 4. Histopathological Findings

Psoriasis (n = 10)	
Hyperkeratosis	7
Parakeratosis	10
Munro microabscess	7
Granular layer absent	8
Acanthosis	7
Suprapapillary thinning	6
Dilated blood vessel	6
Perivascular lymphocytic infiltrate	9
Infiltrate having neutrophils	3
Drug-induced (n = 6)	
Hyperkeratosis	5
Parakeratosis	4
Necrotic keratinocyte	3
Basal cell vacuolization	5
Melanin incontinence	4
Lichenoid infiltrate	3
Perivascular lymhocytic infiltrate	5
Eosinophils in infiltrate	3
Dermatitis (n = 29)	
Hyperkeratosis	25
Parakeratosis	25
Acanthosis	24
Spongiosis	11
Perivascular lymphocytic infiltrate	27
Eosinophils in infiltrate	8

in outdoor activities, male-to-female ratio is quite high in this study.

Most common aggravating factor was seasonal variation seen in 26 patients. Summer exacerbation was seen in 17 patients. Dust and sunlight aggravated the condition in 11 patients each. This is in contrast to another study where winter season was aggravating

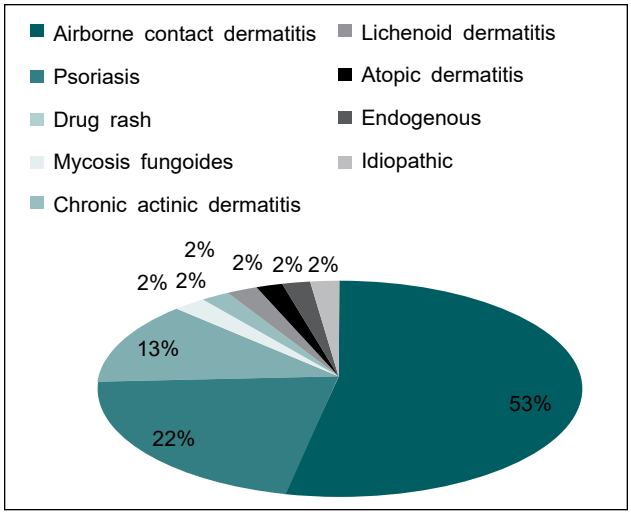


Figure 3. Etiology of erythroderma.

factor seen in 30% patients. In our study, most common cause of erythroderma was airborne contact dermatitis compared to Hulmani et al where most common etiology was psoriasis. This might be the cause of winter exacerbation in their study. Most of the clinical findings were in accordance with other studies. Lymphadenopathy was seen in 70% of our patients and was quite high. Some studies showed it as 19-33%. Others showed it to be around 55%. Nail changes were seen in 55% of patients. Nail changes were Beau's lines, shining in the nails, subungual hyperkeratosis, pitting, yellowish discoloration and onychodystrophy. Similar findings were present in other studies.

Histopathology was successful in determining the specific cause of erythroderma in 32 (68%) of the patients. So, overall clinicopathological correlation occurred in 60% of patients. As in our study, relevant clinical information wasn't provided to the pathologist but still they were able to match the clinical diagnosis in 28 (60%) patients. The percentage might push up higher with relevant clinical information. In a study by Rym et al, histopathological correlation was found in 74% of patients; in a study by Bandopadhyay et al, there was correlation in 52% of cases. Most common histopathological finding in our study was perivascular lymphocytic infiltrate.

The findings are comparable with slight differences from a study by Walsh et al. Comparison of our etiologic diagnosis with the previous studies is compiled in Table 5. In our case series, most common clinical diagnosis was airborne contact dermatitis. It is quite different from other studies where it constituted a minority group.

Table 5. Comparison of Different Etiology of Erythroderma in Various Studies

Study causes	Pal et al[10]	Rym et al[11]	Bandopadhyay et al[9]	Sudho et al[12]	Chaudhary et al[13]	Hulmani et al[8]	Our study
Psoriasis	37.8	51.25	33.33	32	40	33.33	21.2
Eczema	12.2	7.5	4	12	20	20	57.4*
Ichthyosis	7.8	0	1.33	0	0	0	0
Pityriasis rubra pilaris	2.2	5.25	1.33	0	0	3.33	0
Scabies	2.2	1.25	3.33	0	0	0	0
Pemphigus foliaceus	5.6	6.25	5.33	4	0	0	0
Lichen planus	0	1.25	0	0	0	0	0
Atopic dermatitis	0	0	13.33	8	6.66	6.6	2.1
Other dermatoses	6.6	3.75	0	8	0	0	2.1
Drug reaction	5.5	11.25	12	24	10	16.6	12.7
Malignancy	5.5	8.75	2.67	4	6.66	3.3	2.1
Idiopathic	14.6	7.5	21.33	08	16.6	16.6	2.1

SUGGESTED READING

1. Vasconcellos C, Domingues PP, Aoki V, Miyake RK, Sauaia N, Martins JE. Erythroderma: analysis of 247 cases. Rev Saude Publica. 1995;29(3):177-82.
2. Botella-Estrada R, Sanmartin O, Oliver V, Febrer I, Aliaga A. Erythroderma. A clinicopathological study of 56 cases. Arch Dermatol. 1994;130(12):1503-7.
3. Hasan T, Jansen CT. Erythroderma: a follow-up of fifty cases. J Am Acad Dermatol. 1983;8(6):836-40.
4. Walsh NM, Prokopetz R, Tron VA, Sawyer DM, Watters AK, Murray S, et al. Histopathology in erythroderma: review of a series of cases by multiple observers. J Cutan Pathol. 1994;21(5):419-23.
5. Sehgal VN, Srivastava G. Exfoliative dermatitis. A prospective study of 80 patients. Dermatologica. 1986;173(6):278-84.
6. Li J, Zheng JU. Erythroderma: a clinical and prognostic study. Dermatology. 2012;225(2):154-62.
7. Sehgal VN, Srivastava G, Sardana K. Erythroderma/ exfoliative dermatitis: a synopsis. Int J Dermatol. 2004;43(1):39-47.
8. Hulmani M, Nandakishore B, Bhat MR, Sukumar D, Martis J, Kamath G, et al. Clinico-etiological study of 30 erythroderma cases from tertiary center in South India. Indian Dermatol Online J. 2014;5(1):25-9.
9. Bandopadhyay D, Chowdhury SN, Roy AK. Seventy five cases of exfoliative dermatitis. Ind J Dermatol. 1999;44(2):55-7.
10. Pal S, Haroon TS. Erythroderma: a clinico-etiologic study of 90 cases. Int J Dermatol. 1998;37(2):104-7.
11. Rym BM, Mourad M, Bechir Z, Dalenda E, Faika C, Iadh AM, et al. Erythroderma in adults: a report of 80 cases. Int J Dermatol. 2005;44(9):731-5.
12. Sudho R, Hussain SB, Bellraj E, Frederick M, Mahalaxmi V, Sobhana S, et al. Clinicopathological study of exfoliative dermatitis. Indian J Dermatol Venereol Leprol. 2003;69(1):30-1.
13. Chaudhary A, Gupte PD. Erythroderma: a study of incidence and aetiopathogenesis. Indian J Dermatol Venereol Leprol. 1997;63(1):38-9.

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Hyperthermia

- Extraordinarily high fever (>41.5°C). Observed in patients with severe infections, most commonly occurs in patients with central nervous system hemorrhages.
- Most patients with elevated body temperature have fever; but, there are a few conditions in which an elevated temperature represents hyperthermia: Heat stroke syndrome, certain metabolic diseases and the effects of pharmacologic agents that interfere with thermoregulation. It is important to differentiate between fever and hyperthermia.
- Hyperthermia can be rapidly fatal, and its management differs from that of fever.

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Comparing the Incidence of Hearing Impairment in Normal to High-risk Newborns

MV SUBBA RAO*, BJ PRASAD†, MAHESHWAR REDDY‡

ABSTRACT

Objectives: 1) Screening by otoacoustic emission (OAE), to study the incidence of hearing impairment in newborns; 2) to compare the incidence of hearing impairment in normal to high-risk newborns and 3) to study if the risk of hearing impairment increases as the number of risk factors increase. **Material and methods:** This was a prospective nonrandomized observational cohort study from November 2011 to December 2013. All newborns born in the hospital were included. Detailed history (pre- and postnatal) of each newborn pertaining to risk factors for hearing loss was taken and a detailed examination was done. Relevant serological tests were done. Newborns were screened for hearing impairment by OAEs and the result of the test was noted as PASS/REFER (FAIL). **Results:** Overall incidence of hearing impairment in newborns: 1.8%, incidence of hearing impairment in normal newborns: 0.7% and hearing impairment in high-risk newborns: 6.3%. Incidence of hearing impairment was significantly higher in high-risk newborns compared to normal newborns ($p < 0.01$). **Conclusion:** Though, the incidence of hearing impairment is significantly higher in high-risk newborns, targeted screening of high-risk newborns will result in missing a significant number of normal newborns with hearing impairment. Hence, there is a necessity for universal newborn hearing screening program.

Keywords: Hearing impairment, otoacoustic emissions, high-risk newborns

This study was done for identification and remediation of hearing loss in newborn infants who are hard of hearing before the age of 6 months to help them perform significantly higher on vocabulary, communication, intelligence, social skills and behavior.

MATERIAL AND METHODS

This study was done in the postnatal ward of neonatal intensive care unit (NICU) of MediCiti Institute of Medical Sciences, Hyderabad. An informed consent was obtained from the parents or guardians of the infants.

A total of 1,050 neonates were enrolled into the study. Five hundred sixty-two were male and 488 were females. Eight hundred forty-six were normal neonates and 204 were found to be with high-risk factors. They were studied and compared (Table 1).

RESULTS AND ANALYSIS

A total of 19 neonates failed the otoacoustic emission (OAE) test among the 1,050 enrolled neonates (Table 2). Of the 19 neonates who failed the OAE test; six were from them normal newborn group and 13 from the high-risk newborn group.

The overall incidence of hearing impairment among the enrolled neonates in this study was 1.8%. The

Table 1. Distribution of Newborns by Risk Factor for Hearing Impairment

Risk factor	Total no. (N)
Absent	846
Present	204

Table 2. Result of Otoacoustic Emission Test

Total no. of newborns screened	No. of newborns with 'pass' result	No. of newborns with 'refer' result
1,050	1,031	19

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incidence of hearing impairment in normal newborn group was 0.7% and the incidence of hearing impairment in high-risk newborn group was 6.3%. This study showed a significantly higher incidence of hearing impairment in the high-risk newborn group as compared to the normal newborn group with a p value of <0.01.

The overall incidence of hearing impairment in various studies ranges from 0.56% to 8.2% and this comes within the range of the present study of 1.8%. Of the 69 neonates with a birth weight of <1.5 kg enrolled, a total of 8 neonates failed the OAE test. With a p value of <0.01 for difference in incidence of hearing impairment between the normal and very low-birth-weight neonate groups, birth weight of <1.5 kg stands as a significant risk factor for hearing loss in this study. With no neonate in the group with history of intrauterine infection failing the test, there was no statistical significance for this risk factor as an independent risk factor for the hearing impaired.

Statistical significance could not be established for family history of childhood sensorineural hearing loss as an independent risk indicator for hearing impairment in newborns. Eighty-one among the studied newborns had a history of use of ototoxic medications during hospital stay. Six had impaired hearing. The calculated difference in incidence of hearing impairment between this group and the normal newborn group had a p value of <0.01 making use of ototoxic drugs a significant risk factor.

Apgar was significantly associated with hearing impairment. Five of 59 neonates failed the test with p value of <0.01. Four out of 24 newborns with a history of meningitis failed OAE with p value of <0.01. With a p value for difference in hearing impairment between normal and this group of neonates <0.01, mechanical ventilation of ≥5 days significantly increases the risk of hearing impairment.

Neonatal hyperbilirubinemia at a level requiring exchange transfusion is significantly associated with risk of hearing impairment. Three out of 15 failed this test at p value of <0.01. Statistical significance could not be established for craniofacial abnormalities and syndromic stigmata as risk factors for hearing impairment (Table 3).

Prematurity (gestational age ≤37 weeks) was also associated with a risk of hearing impairment ($p < 0.01$).

Table 3. Individual Risk Factor Distribution in High-risk Neonates

Risk factor	No. of cases
Body weight <1.5 kg	69
Intrauterine infection	3
Family history of childhood hearing loss	4
Use of ototoxic medications	81
Apgar 0-4 (1 min), 0-6 (5 mins)	59
Meningitis	24
Mechanical ventilation ≥5 days	20
Neonatal hyperbilirubinemia at a level requiring exchange transfusion	15
Craniofacial abnormalities	2
Syndromic stigmata	0

DISCUSSION

Rughani et al studied a total of 100 neonates with risk factors for hearing impairment. Newborns having the following risk factors were at higher risk of developing hearing impairment: Hyperbilirubinemia requiring exchange transfusion, birth asphyxia, gestational age ≤34 weeks, administration of ototoxic drugs, requirement of mechanical ventilation, NICU stay for ≥2 days, septicemia, birthweight ≤1.5 kg.

Khairi et al from Malaysia suggested craniofacial malformations, very low birth weight, ototoxic medications, stigmata/syndromes associated with hearing loss and hyperbilirubinemia at a level of exchange transfusion were independent significant risk factors for hearing impairment, while poor Apgar scores and mechanical ventilation of >5 days were not.

Hess et al from Germany suggested dysmorphism, prenatal rubella or cytomegalovirus (CMV) infection, family history of hearing loss, severe pre- and postnatal complications to be probable causes for hearing loss.

Weichbold et al from Austria suggested that family history of hearing loss, meningitis, craniofacial malformations, persistent pulmonary hypertension, congenital CMV infection, extracorporeal membrane oxygenation, ototoxic therapy, gestational age <33 weeks increased the risk of hearing impairment.

In this study, birth weight <1.5 kg, history of use of ototoxic medications, Apgar 0-4 (1 min) 0-6 (5 mins), meningitis, mechanical ventilation, neonatal hyperbilirubinemia at a level requiring exchange transfusion significantly increased the risk of hearing impairment.

Risk of hearing impairment was higher in multiple risk factor group compared with single risk factor group. With single factor - 2.56%, 2 risk factors - 16%, with 3 risk factors - 14.2%, 4 risk factors - 33.3%, 5 risk factors - 100%.

Acknowledgment

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SUGGESTED READING

1. Yoshinaga-Itano C, Apuzzo ML. The development of deaf and hard of hearing children identified early through the high-risk registry. Am Ann Deaf. 1998;143(5):416-24.
2. Ruben RJ. Effectiveness and efficacy of early detection of hearing impairment in children. Acta Otolaryngol Suppl. 1991;482:127-31; discussion 132-5.
3. Erenberg A, Lemons J, Sia C, Trunkel D, Ziring P. Newborn and infant hearing loss: detection and intervention. American Academy of Pediatrics. Task Force on Newborn and Infant Hearing, 1998-1999. Pediatrics. 1999;103(2):527-30.
4. Kliegman RM, Stanton BMD, St. Geme J, Schor N, Berham RE. Nelson Textbook of Pediatrics. 19th Edition, Elsevier; 2011. p. 2189.
5. Early identification of hearing impairment in infants and young children. NIH Consensus Statement. 1993;11(1):1-24.
6. Joint Committee on Infant Hearing 1994 Position Statement. American Academy of Pediatrics Joint Committee on Infant Hearing. Pediatrics. 1995;95(1):152-6.
7. Yoshikawa S, Ikeda K, Kudo T, Kobayashi T. The effects of hypoxia, premature birth, infection, ototoxic drugs, circulatory system and congenital disease on neonatal hearing loss. Auris Nasus Larynx. 2004;31(4):361-8.
8. Robinshaw HM. Early intervention for hearing impairment: differences in the timing of communicative and linguistic development. Br J Audiol. 1995;29(6):315-34.
9. Norton SJ, Gorga MP, Widen JE, Folsom RC, Sininger Y, Cone-Wesson B, et al. Identification of neonatal hearing impairment: a multicenter investigation. Ear Hear. 2000;21(5):348-56.
10. Lin HC, Shu MT, Lee KS, Lin HY, Lin G. Reducing false positives in newborn hearing screening program: how and why. Otol Neurotol. 2007;28(6):788-92.
11. Clarke P, Iqbal M, Mitchell S. A comparison of transient-evoked otoacoustic emissions and automated auditory brainstem responses for pre-discharge neonatal hearing screening. Int J Audiol. 2003;42(8):443-7.
12. Nagapoornima P, Ramesh A; Srilakshmi, Rao S, Patricia PL, Gore M, Dominic M; Swarnarekha. Universal hearing screening. Indian J Pediatr. 2007;74(6):545-9.
13. Rughani S, Vyas B, Sinha V, Shah M, Kapileshwar Y, Shah S. Hearing screening in newborns: a cross sectional study. World Articles in Ear, Nose and Throat. 2011; Vol. 4-1.
14. Jewel J, Varghese PV, Singh T, Varghese A. Newborn hearing screening - experience at a tertiary hospital in northwest India. Intern J Otolaryngol Head Neck Surg. 2013;2:211-4.
15. Khairi MD, Din S, Shahid H, Normastura AR. Hearing screening of infants in Neonatal Unit, Hospital Universiti Sains Malaysia using transient evoked otoacoustic emissions. J Laryngol Otol. 2005;119(9):678-83.
16. Hess M, Finckh-Krämer U, Bartsch M, Kewitz G, Versmold H, Gross M. Hearing screening in at-risk neonate cohort. Int J Pediatr Otorhinolaryngol. 1998;46(1-2):81-9.
17. Weichbold V, Nekahm-Heis D, Welzl-Mueller K. Universal newborn hearing screening and postnatal hearing loss. Pediatrics. 2006;117(4):e631-6.

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Vitamin D Levels

Formula of 20/40

- Optimum serum 25-hydroxyvitamin D [25(OH)D] level for patients with bone disorders like osteoporosis is 30 ng/dL *(*IOF 2010, Endocrine Society 2011*)*.
- A serum 25(OH)D level of 30 ng/mL is also preferable for older adults (>50 years), who are at risk for osteoporosis *(*IOF*)*.
- For other patient groups or population, 25(OH)D values of 20 ng/mL may be considered adequate. Many Indians may require supplementation to achieve this level *(*IOF 2010*)*.
- Levels above 40 ng/mL do not provide any additional benefit.
- 25(OH)D levels between 20-40 ng/mL are optimum for most of the population.

Formula of two digits

- If vitamin D levels are in two digits, there is no need to treat aggressively. Give monthly maintenance dose.

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Association Between Statin Therapy and Diabetes Risk

MUKESH MEHRA

ABSTRACT

Worldwide, statins are the most commonly used drugs to prevent adverse cardiovascular events. The US Food and Drug Administration (US FDA), in 2012, revised statin drug labels to include information that statins increase fasting serum glucose and glycated hemoglobin levels as they show adverse effects on glucose control among diabetic patients. Statins affect glucose control through several mechanisms, by affecting insulin production and secretion by β-pancreatic cells, insulin resistance, insulin uptake by the muscles and adipocytes and production of adipokines. Data from many randomized controlled trials and observational studies indicate increased risk for the emergence of new-onset diabetes after statin initiation. High-dose statins appear to be more effective in established cardiovascular disease, but at the expense of increased drug side effects. Many studies done on patients with cardiovascular risk factors have shown that statins have diabetogenic potential and the effect varies as per the dosage and type of statin used. Research in this area needs to be explored more. Physicians might still take some precautions to make risk-benefit ratio more favorable for the patients. The objective of this review is to evaluate the mechanism, evidence from various clinical trials and precautions before start of statin therapy. This review is based on published journal articles obtained through MEDLINE full text, PubMed, Science Direct, Pro Quest, SAGE, Google Scholar and Elsevier Clinical Key.

Keywords: Statins, new-onset diabetes, glucose control, insulin resistance, insulin sensitivity

Statins are the most widely prescribed drugs for primary and secondary prevention of cardiovascular diseases, but recent evidence has proven that statins may be responsible for new-onset diabetes. As a result, the Food and Drug Administration (FDA), in 2012, revised statin drug labels to include information that statins have been found to increase glycosylated hemoglobin (HbA1c) and fasting serum glucose levels. There are currently seven types of statins available in the market: atorvastatin, fluvastatin, lovastatin, pitavastatin, pravastatin, rosuvastatin and simvastatin. All statins are cholesterol-lowering agents with the primary effect of reducing cardiovascular risks. Many studies on various classes of lipid-lowering drugs have demonstrated that lipid altering medications may affect glucose control and insulin sensitivity. Type 2 diabetes mellitus (T2DM) is a metabolic disorder characterized by increased plasma glucose concentration (hyperglycemia) caused by persistent insulin resistance, and progressive β-cell failure. T2DM and cardiovascular diseases are comorbid with each other. Metformin is the first-line treatment for T2DM patients and statins are prescribed as first choice treatment for T2DM patients with dyslipidemia, because of their low-density lipoprotein cholesterol (LDL-C) lowering effects. The current review aims to discuss the mechanisms of how lipid-lowering therapies affect glucose control and the clinical evidence, which supports the study and measures to avoid statin-induced T2DM. This review is based on the information and data gathered from published journal articles obtained through MEDLINE full text, PubMed, Science Direct, Pro Quest, SAGE, Google Scholar and Elsevier Clinical Key.

MECHANISMS FOR THE DIABETOGENIC EFFECTS OF STATINS

Effect of Statins on Insulin Production and Secretion by Pancreatic β-cells

The potential mechanisms include the effects of statins on hydroxymethylglutaryl-coenzyme A (HMG-CoA) reductase inhibition, which plays a key role in synthesizing sterol isoprenoids. Statins reduce glycemic control by blocking the production of several metabolites

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usually produced during cholesterol synthesis in the mevalonate pathway.

Glucose is transported by glucose transporter 2 (GLUT2) into β-cells, in which it is routed to the metabolic pathway after phosphorylation to glucose-6-phospate by glucokinase. The metabolic cascade involves closing of the ATP-dependent potassium channel, cell membrane depolarization and L-type calcium channel-mediated calcium influx, resulting in the secretion of insulin by exocytosis of insulin-containing granules. Glucokinase is inhibited by abundance of plasma cholesterol and is affected by statin-induced inhibition of *de novo* cholesterol synthesis with increased uptake of plasma LDL. Statins have been shown to inhibit this glucose-induced calcium signaling-dependent insulin secretion.

In addition, statins suppress the synthesis of ubiquinone (CoQ10), an essential factor in the mitochondrial electron-transfer system, resulting in inhibition of insulin secretion due to reduced production of ATP. Nakata et al demonstrated that statins decrease the expression of another glucose transporter in adipocytes (GLUT4), resulting in impaired glucose tolerance. Statin inhibition of HMG-CoA reductase suppresses the synthesis of isoprenoids, thus causing downregulation of GLUT4 expression on adipocyte cells, leading to impaired glucose uptake. The diabetogenic effects of statins center on altered secretion of islet β-cell insulin, which affect the function of the β-cells and thus precipitate dysregulation of glucose metabolism. The inhibition of HMG-CoA reductase causes upregulation of LDL receptors for enhanced uptake of LDL-C. The oxidation of LDL-C may incite an inflammatory cascade that compromises the functional (insulin secretion apparatus) and structural integrity of the islet β-cells. Over-production of nitric oxide (NO) by cytokines can cause β-cell destruction via the activation of calpain, a calcium-dependent protease. High-density lipoprotein (HDL) protects β-cells against apoptosis, while LDL has the ability to induce apoptosis, particularly following oxidative modification. The interplay between inflammation, oxidation and apoptosis, triggered by increased abundance of plasma-derived LDL-C due to statin-induced blockade of *de novo* cholesterol synthesis may contribute to the pathogenesis of diabetes during extended statin use. Figure 1 depicts the effect of statins on mevalonate pathway.

Effect of Statins on Adipose Tissue

Adipose tissue is responsible for the secretion of an array of signaling molecules termed as adipokines (leptin, adiponectin, resistin and visfatin). Adipokines could lead to an inflammatory response in the adipose tissue, which could play a role in the development of insulin resistance. A dysfunction of adipokines can be implicated in obesity, type 2 diabetes and the increased risk of cardiovascular disease.

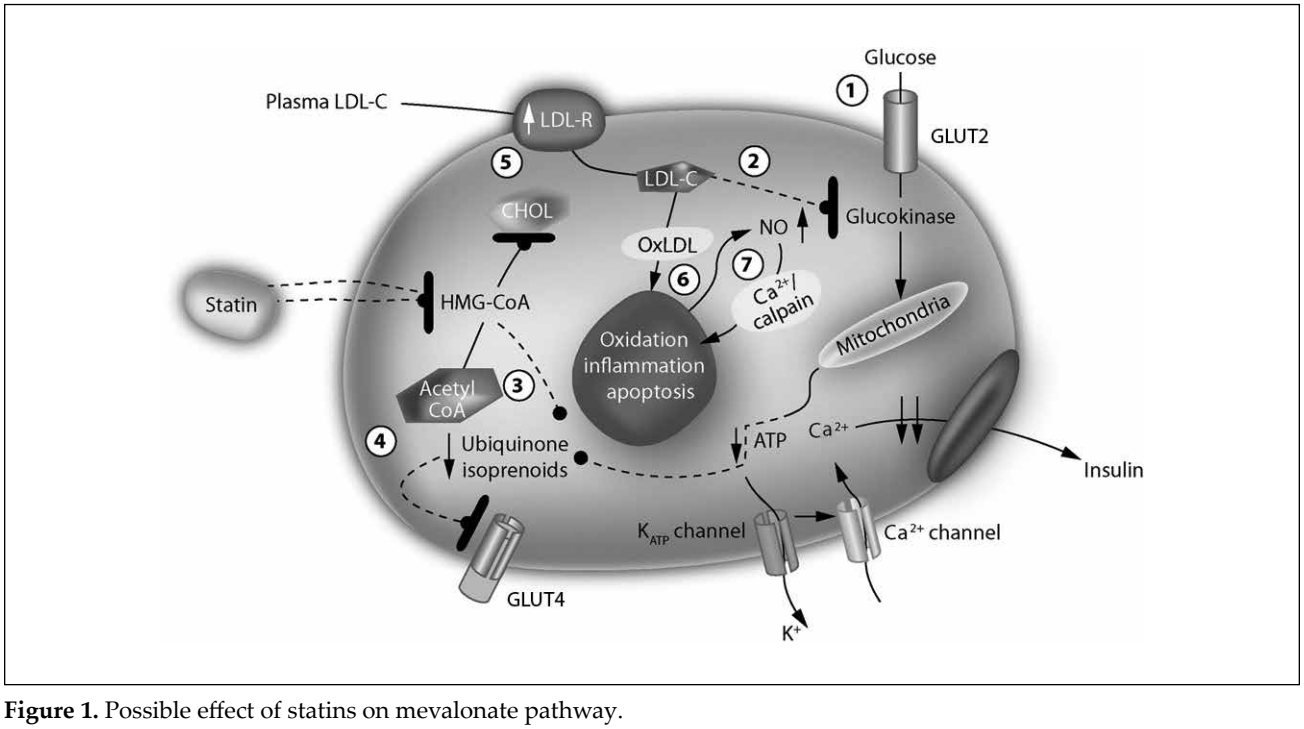


Figure 1. Possible effect of statins on mevalonate pathway.

The adipose tissue contains distinct regions of lipid storage known as lipid rafts and caveolae. Caveolae have integral membrane proteins (Cav-1 and Cav-2). Statins show an inhibitory effect on the caveolae formation through low Cav-1 levels. As adiponectin levels and Cav-1 positively correlate with each other, when statins inhibit the Cav-1 expression, the mechanism of the secretion of adiponectin is also disrupted.

Adipocyte maturation/differentiation is a process all preadipocytes must undergo before they can secrete insulin sensitizing hormones along with GLUT4 translocation and therefore directly affects insulin resistance. An accumulation of undifferentiated adipocytes may lead to increased insulin resistance and the risk of the development of statin-induced diabetes. Macrophages present in the adipose tissue possess several proinflammatory cytokines such as tumor necrosis factor (TNF)-α that inhibit insulin action along with adiponectin production in adipocytes, thus leading to risks of inflammation. Effect of statins on adipose tissue has been summarized in Figure 2.

Effect of Statins on Skeletal Muscle

Several factors are responsible for contributing to statin effect on myopathy:

- Statins reduce LDL-C by altering the mevalonate pathway and thus may result in the impaired mitochondrial oxidative metabolism as well as energy production.
- Adversely affect the ubiquitin-proteasome pathway (UPP) which plays an important role in the structural integrity of the skeletal muscle and is responsible for the degradation and repair of many skeletal muscle proteins.
- Statin-induced apoptosis could also occur via calpain (stimulates programmed cell death), repression of the Birc4 and the activation of proapoptosis gene CFLAR.
- Finally, statins alter Ca^{2+} homeostasis by increasing systolic Ca^{2+}, which might impair sarcoplasmic reticulum calcium cycling.

EVIDENCE FROM CLINICAL TRIALS

Clinical studies have yielded inconclusive results on the association between statin usage and blood sugar. Preclinical and clinical data show the effect of statins on various parameters of glycemic control. Many studies have shown that atorvastatin, rosuvastatin and simvastatin increase both HbA1c and fasting plasma glucose (FPG) levels. A large scale study implicates that pravastatin reduced the rate of new-onset diabetes by 30%. Atorvastatin attenuates adipocyte maturation, resulting in inhibiting isoprenoid synthesis, and impairs glucose tolerance. Simvastatin blocks L-type Ca^{2+} channels, resulting in decreased insulin secretion. Lovastatin was shown to downregulate GLUT4 and upregulate GLUT1, leading to inhibition of insulin-stimulated glucose transport. Further, it has also been indicated that the risk for new-onset diabetes holds probably true for all statins and occurs in a dose-dependent fashion. Table 1 suggests an association between statin therapy and new-onset diabetes.

The Justification for the Use of Statins in Primary Prevention: An Intervention Trial Evaluating Rosuvastatin (JUPITER) trial reported a 25% increase with rosuvastatin 20 mg, over a median follow-up of 1.9 years, compared to placebo. Navarese et al

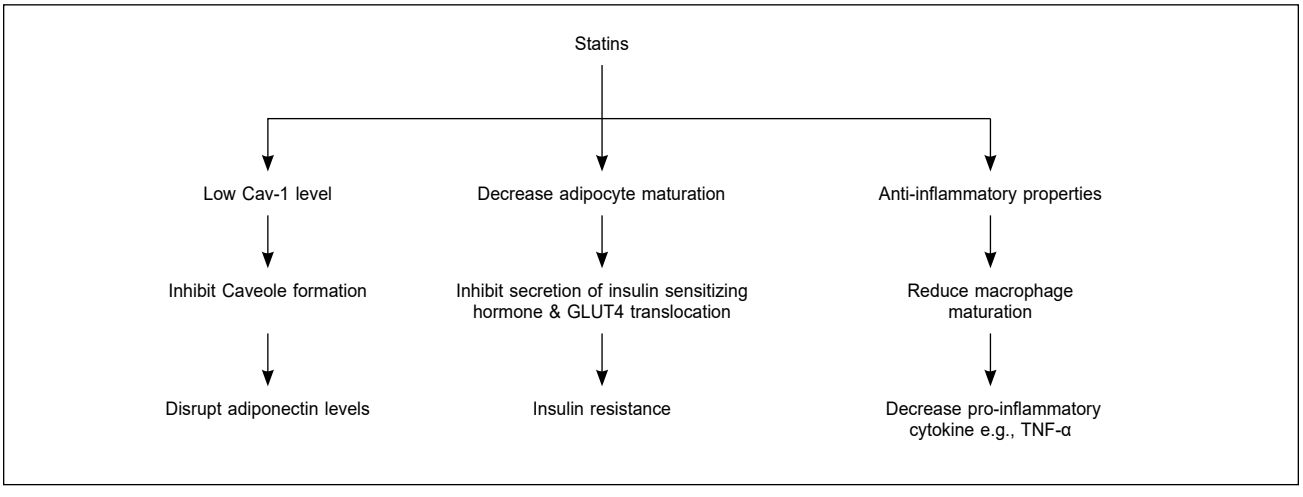


Figure 2. Effect of statins on adipose tissue.

Table 1. Randomized Controlled Trials Evaluating the Effect of Statin Use and Risk of T2DM

Study (year of primary publication)	Comparison vs. placebo	Study population	Event or incident (statin/placebo)	OR (95% CI)
WOSCOPS (2001)	Pravastatin 40 mg	5,974	75/93	0.79 (0.58-1.10)
HPS (2003)	Simvastatin 40 mg	14,573	335/293	1.15 (0.98-1.35)
ALLHAT-LLT (2002)	Pravastatin 40 mg	6,087	238/212	1.15 (0.05-1.41)
LIPID (2003)	Pravastatin 40 mg	6,997	126/138	0.91 (0.71-1.71)
ASCOT-LLA (2003)	Atorvastatin 10 mg	7,773	154/134	1.14 (0.89-1.46)
MEGA (2006)	Pravastatin 10-20 mg	6,086	172/164	1.07 (0.86-1.35)
CORONA (2007)	Rosuvastatin 10 mg	3,534	100/88	1.14 (0.84-1.55)
JUPITER (2008)	Rosuvastatin 20 mg	17,802	270/216	1.26 (1.04-1.51)

found added new-onset diabetes risk of 7% with pravastatin (40 mg), 15% with atorvastatin (80 mg) and 25% with rosuvastatin (20 mg), in a meta-analysis of 17 controlled randomized trials. They accomplished that the diabetes incidence increases differently with the type of statin and doses used.

Ridker et al analyzed the JUPITER trial results in patients with none or minimum one risk factor for developing diabetes (body mass index [BMI] ≥30 kg/m^2, metabolic syndrome or HbA1c ≥6%, impaired fasting sugar) and found that in individuals with one or more risk factors, statin use was associated with a 28% increase in diabetes (1.28, 1.07-1.54, p = 0.01). For those with no major diabetes risk factors, statin allocation was associated with no increase in diabetes (0.99, 0.45-2.21, p = 0.99). Therefore, the patients carrying some diabetes-related risk factors were at increased risk of developing diabetes, and advantages of statin treatment surpassed the diabetes vulnerability, even in those at increased risk of becoming diabetic.

In the Pravastatin or Atorvastatin Evaluation and Infection Therapy–Thrombolysis in Myocardial Infarction (PROVE-IT TIMI) 22 trial, among pravastatin 40 mg treated patients, the HbA1c levels increased by 0.12%, while atorvastatin 80 mg group showed 0.30% rise. Another study comparing glycemic control between diabetic patients receiving atorvastatin 10 mg pravastatin 10 mg or pitavastatin 2 mg/day showed that the blood glucose and HbA1c levels increased only in the atorvastatin-treated patients. Pitavastatin, the newest statin has revealed positive outcome by reducing insulin resistance and effect on glucose metabolism was minimal.

Lipophilic statins (atorvastatin, simvastatin, fluvastatin, pitavastatin and lovastatin) are more likely to cause diabetes as they can easily enter extrahepatic cell membranes like adipocytes, skeletal muscles and β-cells, whereas hydrophilic (pravastatin and rosuvastatin) statins are highly specific to hepatocytes and have minimal chances of entering adipocytes or β-cells.

The diabetogenic effect of statins in women may not be similar to that in men. Culver et al observed that statin use among postmenopausal women participating in the Women's Health Initiative was associated with an increased risk for type 2 diabetes. This effect was observed for all types of statins, thus appearing to be a class effect.

MEASURES TO AVOID STATIN-INDUCED NEW-ONSET DIABETES

Statins' adverse effect on glycemic control needs to be explored more. The physicians, before starting statin therapy, can take some precautions to make risk-benefit ratio more favorable to the patients. They can follow some points which have already been mentioned by Aiman et al.

- Screening for type 2 diabetes (T2DM) before starting statin therapy.
- Since high-dose treatment is associated with higher risk, start therapy with low doses and when clearly indicated, avoid high doses in women and elderly population.
- While simvastatin, rosuvastatin and atorvastatin all increase the risk, pravastatin appears to reduce risk for new-onset diabetes.

- Regular exercise and diet control benefit the patients. They should be stressed regularly. Since insulin resistance has shown association with vitamin D deficiency, addition of vitamin D might improve insulin sensitivity.
- Patients should be informed about the possible risk of diabetes.

Studies prove that T2DM and CVDs are comorbid with each other. Dyslipidemia and insulin resistance are the risk factors for myocardial infarction. A recent review by van Stee et al suggests the combination therapy of metformin and statin to treat T2DM. As statin increases the risk of T2DM particularly in prediabetic subjects, co-treatment with metformin might reduce this risk.

CONCLUSION

The incidence of new-onset diabetes varies among randomized clinical trials. The clinical data suggest that statin therapy is associated with an increased risk for diabetes. Comparisons of the higher and lower dose of statins suggest that there may be a higher risk for incident diabetes at higher doses and may also vary with the type of statins. Furthermore, more potent statins, such as atorvastatin and simvastatin, have been associated with a higher rate of diabetes compared with lower potency statins. Still, efforts are required to explore the relationships between statin therapy and diabetes, both in future clinical trials and preclinical investigations. Since metformin shows beneficial effects on both dyslipidemia and glycemic control and has been shown to reduce CVD risk while statins have an added beneficial effect on CVD risk, combined treatment with both the drugs can be a better option. So, the combination therapy of metformin and statins can reduce the risk of statin-induced diabetes. Still, more studies are required to prove the role of combined metformin-statin treatment.

SUGGESTED READING

1. Food and Drug Administration. FDA drug safety communication: Important safety label changes to cholesterol-lowering statin drugs. Available at: http://www.fda.gov/Drugs/DrugSafety/ucm293101.htm. Accessed February 15, 2015.
2. Zhou Q, Liao JK. Pleiotropic effects of statins. - Basic research and clinical perspectives -. Circ J. 2010;74(5):818-26.
3. Liew SM, Lee PY, Hanafi NS, Ng CJ, Wong SS, Chia YC, et al. Statins use is associated with poorer glycaemic control in a cohort of hypertensive patients with diabetes and without diabetes. Diabetol Metab Syndr. 2014;6:53.
4. Sasaki J, Iwashita M, Kono S. Statins: beneficial or adverse for glucose metabolism. J Atheroscler Thromb. 2006;13(3):123-9.
5. Kostapanos MS, Liamis GL, Milionis HJ, Elisaf MS. Do statins beneficially or adversely affect glucose homeostasis? Curr Vasc Pharmacol. 2010;8(5):612-31.
6. Kruit JK, Brunham LR, Verchere CB, Hayden MR. HDL and LDL cholesterol significantly influence beta-cell function in type 2 diabetes mellitus. Curr Opin Lipidol. 2010;21(3):178-85.
7. Yada T, Nakata M, Shiraishi T, Kakei M. Inhibition by simvastatin, but not pravastatin, of glucose-induced cytosolic Ca2+ signalling and insulin secretion due to blockade of L-type Ca2+ channels in rat islet beta-cells. Br J Pharmacol. 1999;126(5):1205-13.
8. Mabuchi H, Higashikata T, Kawashiri M, Katsuda S, Mizuno M, Nohara A, et al. Reduction of serum ubiquinol-10 and ubiquinone-10 levels by atorvastatin in hypercholesterolemic patients. J Atheroscler Thromb. 2005;12(2):111-9.
9. Nakata M, Nagasaka S, Kusaka I, Matsuoka H, Ishibashi S, Yada T. Effects of statins on the adipocyte maturation and expression of glucose transporter 4 (SLC2A4): implications in glycaemic control. Diabetologia. 2006;49(8):1881-92.
10. Nakata M, Uto N, Maruyama I, Yada T. Nitric oxide induces apoptosis via Ca2+-dependent processes in the pancreatic beta-cell line MIN6. Cell Struct Funct. 1999;24(6):451-5.
11. Abderrahmani A, Niederhauser G, Favre D, Abdelli S, Ferdaoussi M, Yang JY, et al. Human high-density lipoprotein particles prevent activation of the JNK pathway induced by human oxidised low-density lipoprotein particles in pancreatic beta cells. Diabetologia. 2007;50(6):1304-14.
12. Cnop M, Hannaert JC, Grupping AY, Pipeleers DG. Low density lipoprotein can cause death of islet beta-cells by its cellular uptake and oxidative modification. Endocrinology. 2002;143(9):3449-53.
13. Roehrich ME, Mooser V, Lenain V, Herz J, Nimpf J, Azhar S, et al. Insulin-secreting beta-cell dysfunction induced by human lipoproteins. J Biol Chem. 2003;278 (20):18368-75.
14. Cholesterol Treatment Trialists' (CTT) Collaborators, Kearney PM, Blackwell L, Collins R, Keech A, Simes J, Peto R, et al. Efficacy of cholesterol-lowering therapy in 18,686 people with diabetes in 14 randomised trials of statins: a meta-analysis. Lancet. 2008;371(9607):117-25.
15. Ting RZ, Yang X, Yu LW, Luk AO, Kong AP, Tong PC, et al. Lipid control and use of lipid-regulating drugs for prevention of cardiovascular events in Chinese type 2 diabetic patients: a prospective cohort study. Cardiovasc Diabetol. 2010;9:77.
16. Marder SR, Essock SM, Miller AL, Buchanan RW, Casey DE, Davis JM, et al. Physical health monitoring of patients with schizophrenia. Am J Psychiatry. 2004; 161(8):1334-49.

IJCP SUTRA 601: 'Common cold' refers to a mild upper respiratory viral illness presenting with sneezing, nasal congestion, nasal discharge, low-grade fever, headache and malaise.

17. Kwon H, Pessin JE. Adipokines mediate inflammation and insulin resistance. Front Endocrinol (Lausanne). 2013;4:71.
18. Antuna-Puente B, Feve B, Fellahi S, Bastard JP. Adipokines: the missing link between insulin resistance and obesity. Diabetes Metab. 2008;34(1):2-11.
19. Sunjaya AP, Sunjaya AF, Halim S, Ferdinal F. Risk and benefits of statins in glucose control management of type II diabetes. Int J Angiol. 2018;27(3):121-31.
20. Khan T, Hamilton MP, Mundy DI, Chua SC, Scherer PE. Impact of simvastatin on adipose tissue: pleiotropic effects in vivo. Endocrinology. 2009;150(12):5262-72.
21. Abe M, Matsuda M, Kobayashi H, Miyata Y, Nakayama Y, Komuro R, et al. Effects of statins on adipose tissue inflammation: their inhibitory effect on MyD88-independent IRF3/IFN-beta pathway in macrophages. Arterioscler Thromb Vasc Biol. 2008;28(5):871-7.
22. Parker BA, Thompson PD. Effect of statins on skeletal muscle: exercise, myopathy, and muscle outcomes. Exerc Sport Sci Rev. 2012;40(4):188-94.
23. Di Stasi SL, MacLeod TD, Winters JD, Binder-Macleod SA. Effects of statins on skeletal muscle: a perspective for physical therapists. Phys Ther. 2010;90(10):1530-42.
24. Ishikawa M, Namiki A, Kubota T, Yajima S, Fukazawa M, Moroi M, et al. Effect of pravastatin and atorvastatin on glucose metabolism in nondiabetic patients with hypercholesterolemia. Intern Med. 2006;45(2):51-5.
25. Koh KK, Quon MJ, Han SH, Lee Y, Ahn JY, Kim SJ, et al. Simvastatin improves flow-mediated dilation but reduces adiponectin levels and insulin sensitivity in hypercholesterolemic patients. Diabetes Care. 2008;31(4):776-82.
26. Koh KK, Quon MJ, Han SH, Lee Y, Kim SJ, Shin EK. Atorvastatin causes insulin resistance and increases ambient glycemia in hypercholesterolemic patients. J Am Coll Cardiol. 2010;55(12):1209-16.
27. Kostapanos MS, Milionis HJ, Agouridis AD, Rizos CV, Elisaf MS. Rosuvastatin treatment is associated with an increase in insulin resistance in hyperlipidaemic patients with impaired fasting glucose. Int J Clin Pract. 2009;63(9):1308-13.
28. Freeman DJ, Norrie J, Sattar N, Neely RD, Cobbe SM, Ford I, et al. Pravastatin and the development of diabetes mellitus: evidence for a protective treatment effect in the West of Scotland Coronary Prevention Study. Circulation. 2001;103(3):357-62.
29. Chamberlain LH. Inhibition of isoprenoid biosynthesis causes insulin resistance in 3T3-L1 adipocytes. FEBS Lett. 2001;507(3):357-61.
30. Sattar N, Preiss D, Murray HM, Welsh P, Buckley BM, de Craen AJ, et al. Statins and risk of incident diabetes: a collaborative meta-analysis of randomised statin trials. Lancet. 2010;375(9716):735-42.
31. Ridker PM, Danielson E, Fonseca FA, Genest J, Gotto AM Jr, Kastelein JJ, et al; JUPITER Study Group. Rosuvastatin to prevent vascular events in men and women with elevated C-reactive protein. N Engl J Med. 2008;359(21):2195-207.
32. Navarese EP, Buffon A, Andreotti F, Kozinski M, Welton N, Fabiszak T, et al. Meta-analysis of impact of different types and doses of statins on new-onset diabetes mellitus. Am J Cardiol. 2013;111(8):1123-30.
33. Ridker PM, Pradhan A, MacFadyen JG, Libby P, Glynn RJ. Cardiovascular benefits and diabetes risks of statin therapy in primary prevention: an analysis from the JUPITER trial. Lancet. 2012;380(9841):565-71.
34. Vallejo-Vaz AJ, Kondapally Seshasai SR, Kurogi K, Michishita I, Nozue T, Sugiyama S, et al. Effect of pitavastatin on glucose, HbA1c and incident diabetes: A meta-analysis of randomized controlled clinical trials in individuals without diabetes. Atherosclerosis. 2015;241(2):409-18.
35. Yamakawa T, Takano T, Tanaka S, Kadonosono K, Terauchi Y. Influence of pitavastatin on glucose tolerance in patients with type 2 diabetes mellitus. J Atheroscler Thromb. 2008;15(5):269-75.
36. Kawai Y, Sato-Ishida R, Motoyama A, Kajinami K. Place of pitavastatin in the statin armamentarium: promising evidence for a role in diabetes mellitus. Drug Des Devel Ther. 2011;5:283-97.
37. Culver AL, Ockene IS, Balasubramanian R, Olendzki BC, Sepavich DM, Wactawski-Wende J, et al. Statin use and risk of diabetes mellitus in postmenopausal women in the Women's Health Initiative. Arch Intern Med. 2012;172(2):144-52.
38. Aiman U, Najmi A, Khan RA. Statin induced diabetes and its clinical implications. J Pharmacol Pharmacother. 2014;5(3):181-5.
39. Mortensen MB, Kulenovic I, Falk E. Statin use and cardiovascular risk factors in diabetic patients developing a first myocardial infarction. Cardiovasc Diabetol. 2016;15:81.
40. van Stee MF, de Graaf AA, Groen AA. Actions of metformin and statins on lipid and glucose metabolism and possible benefit of combination therapy. Cardiovasc Diabetol. 2018;17(1):94.

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A Study of Antepartum Cardiotocography in Mothers with Reduced Fetal Movement at Term and Its Correlation with Fetal Outcome

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ABSTRACT

Maternal perception of fetal movement is one of the first signs of fetal life and is regarded as a manifestation of fetal well-being. Reduced or absent fetal movements may be a warning sign of impending fetal death. According to the various tracings obtained on cardiotocography (CTG), categorization can be done into normal, suspicious or abnormal/pathological and thereby fetal jeopardy can be reliably predicted. This study was designed to evaluate the CTG findings in mothers with complaint of reduced fetal movement and their fetal outcome at term. It was seen that abnormal and suspicious CTG were more commonly associated with meconium-stained liquor at delivery; also they were associated with a higher rate of cesarean section with fetal distress being the most common indication among these two groups.

Keywords: Cardiotocography, reduced fetal movement, fetal distress, meconium-stained liquor

Maternal perception of fetal movement is among the first signs of fetal life and is considered a manifestation of fetal well-being. Movements are first perceived by the mother around 18-20 weeks of gestation and rapidly acquire a regular pattern. Fetal movements have been defined as any discrete kick, flutter, swish or roll. A marked reduction or sudden alteration in fetal movement is a potentially important clinical sign. Reduced or absent fetal movements may be a warning sign of impending fetal death. Studies of fetal physiology using ultrasound have pointed to an association between reduced fetal movement (RFM) and poor perinatal outcome. The majority of women (55%) experiencing a stillbirth perceived a reduction in fetal movements prior to diagnosis. Maternal perception of fetal movement is reassuring to pregnant women and doctors, whereas RFM is a common reason for concern. In our hospital, many mothers come with the complaint of RFM. Also, there is a high rate of perinatal complications. RFM can be a sign of ongoing central nervous system (CNS) hypoxia and injury. A cardiotocograph or electronic fetal monitoring is nowadays more commonly used for monitoring fetal heart rate (FHR) along with RFM. There is an observed association of FHR acceleration with fetal movements, which when present, indicates a healthy fetus. It can reliably be used as a screening test. According to the various tracings obtained on cardiotocography (CTG), categorization can be done into normal, suspicious or abnormal/pathological and thereby fetal jeopardy can be reliably predicted. So by doing a CTG in mothers with complaint of RFM (as per the Royal College of Obstetricians and Gynecologists [RCOG] guidelines), we can find out whether actual fetal distress is present or not and plan for management accordingly.

Fetal movement commences as early as 7 weeks and becomes coordinated by the end of pregnancy. Between 20 and 30 weeks gestational age, general body movement becomes organized and fetus starts showing rest-activity cycles. Perception of fetal movements typically begins in the second trimester and occurs earlier in parous women than nulliparous women. In 1973, Sadovsky and Yaffe described seven case reports of pregnancies with reduced fetal activity that preceded fetal death. Since then, various methods have been

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described to quantify fetal movement as a prognostic factor of fetal well-being. There are several methods of counting fetal movement, like daily 'kick count chart', Cardiff 'count to 10' formula, daily fetal movement count (DFMC), etc. Currently, fetal movement is thought to be reassuring if mother perceives 10 fetal movements in up to 2 hours. Incidence rate of mothers presenting with RFM is variable. A study reported that 7% of 6,793 women delivered at a London Hospital presented with a complaint of RFM. It is clear that complaints of RFM are significant and warrant further evaluation.

Monitoring the fetal well-being in the uterus during pregnancy is often undertaken using a CTG. A CTG assesses the pattern of FHR alongside the size of uterine contractions; however, it is not very accurate, so monitoring of fetal movements is a useful addition to predict babies in difficulty. It is seen that a normal nonstress CTG is a reliable indicator of fetal well-being in mothers with complaint of RFM. In third trimester pregnant women with complaint of RFM, abnormal pregnancy outcomes are more common where the initial CTG was abnormal.

This study was designed to evaluate the CTG findings in mothers with complaint of RFM and their fetal outcome at term. The aim of this study was to find out the sensitivity and specificity of CTG in relation to fetal outcome in such cases.

MATERIAL AND METHODS

The prospective observational study was carried out in the Dept. of Obstetrics and Gynecology, Eden Hospital, Medical College, Kolkata from June 2012 to May 2013. The study was conducted after obtaining clearance from the Ethics Committee. An informed consent was taken and signed by the patients before recruitment. One hundred cases of antepartum women at or more than 37 weeks to 42 completed weeks of gestation with singleton fetus complaining of RFM were selected randomly for our study. Pregnant women with multiple pregnancy, diagnosed intrauterine fetal death (IUFD), thickly meconium-stained liquor at admission, high-risk factors like antepartum hemorrhage, congenitally malformed fetus, active labor and doubtful fetal maturity were excluded from our study. Clinical examination was done after taking proper history. Antenatal investigations such as complete hemogram, blood sugar estimation, blood grouping, Rh typing, human immunodeficiency virus (HIV) I and II, Venereal Disease Research Laboratory (VDRL), hepatitis B surface antigen, urine and stool examinations were done as usual. CTG, umbilical cord blood pH estimation (2 mL blood was drawn in a heparinized syringe and cord blood pH was determined) and estimation of Apgar score at 1 and 5 minutes after birth were done in all cases. All relevant data was collected for statistical analysis. In this study, test for means were conducted using the data analysis add-in functionality of Chi-square analyses of contingency tables and test. Calculation of proportions reported in the study was derived.

RESULT AND ANALYSIS

A total of 100 women who had complained of RFM were selected according to inclusion criteria. Table 1 shows the baseline characteristics of the selected population. Majority of our study population belonged to younger age group (74% <25 years of age), primigravida (61%) and most of the study population had a period of gestation between 39 and 40 weeks. Cardiotocographical monitoring was done for the selected pregnant women with RFM and they were grouped under normal CTG (Group A), suspicious CTG (Group B) and abnormal CTG (Group C). It was seen that normal, suspicious and abnormal CTG were 70%, 16% and 14%, respectively (Table 2). Distribution of different CTG interpretation groups with the different outcome measures such as incidence of fetal distress, meconium-stained liquor, mode of delivery, cord blood pH, Apgar score at 1 minute/5 minutes and stillbirth rate are shown in Tables 3 and 4.

Table 1. Baseline Characteristics

Parameters	Distribution (n = 100)		Percentage (%)
Age (years)	≤20	30	30
	21-25	44	44
	26-30	22	22
	30-35	3	3
	≥35	1	1
Gravida			
Primi	-	61	61
Multi	-	39	39
Gestational age (weeks)	37-38	10	10
	>38-39	18	18
	>39-40	66	66
	>40-41	1	1
	>41-42	5	5

Table 2. Interpretation of CTG

CTG	Number	Percentage (%)
Normal (Group A)	70	70
Suspicious (Group B)	16	16
Abnormal (Group C)	14	14

Table 3. Different CTG Interpretation Groups with the Different Outcome Measures

Parameters	Group A (n = 70)	Group B (n = 16)	Group C (n = 14)	Total (n = 100)
Incidence of fetal distress	1	11	10	22
Incidence of meconium-stained liquor	5	13	14	32
Mode of delivery				
Vaginal delivery	40	4	4	48
LSCS	30	12	10	52
Incidence of stillbirth	2	0	4	6

Table 4. Cord Blood pH and Apgar Score at 1 Minute and 5 Minutes

Parameters	Group A (n = 70)	Group B (n = 16)	Group C (n = 14)	Total (n = 100)
Cord blood pH <7.2	2	2	13	17
Apgar score at 1 minute				
No depression	66	6	0	72
Mild depression	2	10	3	15
Severe depression	0	0	7	7
Apgar score at 5 minutes				
No depression	68	14	4	86
Mild depression	0	2	5	7
Severe depression	0	0	1	1

DISCUSSION

Reduced fetal movement (RFM) is a common reason for concern for mothers as well as doctors, whereas maternal perception of fetal movement is reassuring to both. There is a possibility of intrauterine fetal death and other perinatal complications in such cases. Fetal movement count by Cardiff 'count to 10' formula or by DFMC is one of the biophysical tests used to assess fetal well-being in late pregnancy. In the present study, a total of 100 cases were taken. All of them presented with RFM. The 100 cases were divided into three groups. Group A included those who had a normal CTG. Those with suspicious CTG belonged to Group B and patients with abnormal CTG were allotted Group C. Majority of the cases belonged to the young age group, that is 74% were <25 years old and primigravida (61%). Study conducted by Miller, Eden et al, Usher et al and Steer et al showed that fetal distress and meconium-stained liquor are more common in postdated cases. But in our study, majority of patients with suspicious and abnormal CTG had period of gestation between 39 and 40 weeks. In Table 2, it is seen that among patients with RFM, 70% had a normal CTG, 16% had a suspicious CTG and 14% had an abnormal CTG. Accordingly, we have divided our study population into three groups A, B and C, respectively. It was seen that in all three groups, the majority of the women belonged to younger age group, mostly 21-25 years and ≤20 years. The p value is 0.279, which is >0.05, therefore not significant. This means that there was no correlation between age and patients presenting with RFM, which is true. It was seen that mothers of all ages can equally present with RFM. In our country, there is a trend towards early marriage and early childbearing; so most of our study population belonged to younger age groups.

Sixty-one percent mothers were primigravida. The p value is 0.482, which is not significant. All mothers can

IJCP SUTRA 605: Common cold can also be transmitted via large particles (droplets) that typically require close contact with infected person.

present with the complaint of RFM irrespective of their parity. A similar study conducted by Fitzgerald and Miller demonstrated that the incidence of suspicious and abnormal CTG in primigravida was more than multipara, whereas Rosario found no significant difference. Table 3 shows the incidence of fetal distress in different groups. Approximately 71.4% of babies in Group C had fetal distress, whereas only 1.4% of Group A had fetal distress. One hundred percent of Group C had meconium-stained liquor at delivery, whereas 7.1% of Group A had meconium-stained liquor at delivery. In Group A, 57.1% of patients had a vaginal delivery. In Group B and C, 75% and 71.4% underwent lower-segment cesarean section (LSCS), respectively. The p value is 0.02, which is significant. It was seen that the incidence of LSCS was more in the suspicious and abnormal CTG groups.

In the suspicious and abnormal CTG group, it was seen that 91.7% and 100%, respectively underwent LSCS for fetal distress. The p value is 0.0001, which is highly significant. The incidence of fetal distress was much higher in suspicious and abnormal CTG group and therefore the incidence of LSCS due to fetal distress in these two groups was also higher. Chitra and Neeru demonstrated operative delivery for fetal distress was 1.16% in the normal CTG group, 32% in the equivocal group and 70% in the abnormal CTG group. Kulkarni and Shrotri showed progressive rise of operative delivery for fetal distress from 5.17% in reactive group to 28.5% in ominous group. Elimian et al were also in favor that women with nonreactive admission test (CTG) were more likely to be delivered by cesarean section, to have fetal distress resulting in LSCS and to have longer neonatal hospital stay.

In Group A, 92.9% had clear liquor at delivery; in Group B, 81.3% had meconium-stained liquor; in Group C, 100% had meconium-stained liquor at delivery. The p value is 0.0001, which is highly significant. So, in the suspicious and abnormal CTG group, the incidence of meconium-stained liquor was much higher. In a retrospective study, "Study of meconium-stained liquor and its fetal outcome" conducted by M Priyadarshini and S Panicker, it was seen that meconium-stained liquor with abnormal CTG was associated with poor outcome, increased cesarean section rates and increased neonatal complication.

Tables 3 and 4 show the distribution according to the fetal outcome in different groups. In Group A, 97.1% babies were live; in Group B, 100% babies were live and in Group C, 71.4% babies were live and 28.6% were stillborn. The p value is 0.001, which is significant. So, we can say that abnormal CTG is a good predictor of adverse fetal outcome. The stillborn rate in the present study was 6%, which is comparable to similar studies conducted by Hellman, Gaud and Krishna and Narang. Whereas a study by Fujikura and Klionsky showed a neonatal mortality rate of 3%.

In Groups A and B, 97.1% and 87.5% had cord blood pH >7.2, respectively. In Group C, 92.9% had a cord blood pH <7.2 and 7.1% had cord blood pH >7.2. The p value is 0.0001, which is highly significant. Metabolic acidosis was more common among the abnormal CTG group. Smith et al analyzed the umbilical cord arterial blood gas in 21 patients undergoing cesarean section because of abnormal CTG. They found minor degrees of respiratory acidemia and concluded that abnormal CTG traces may be associated with hypoxia, but were unrelated to asphyxia. The small number of the study population was a limitation of the study.

The distribution of Apgar score at 1 minute in different groups was seen. In Group A, 97.1% babies had no depression and 2.9% had mild depression. In Group B, 62.5% babies had mild depression and 37.5% had no depression. The p value is 0.0001, which is significant. So, 1 minute low Apgar score was more in the abnormal CTG group and in cases of meconium-stained liquor. This is in accordance with observations made by Walkar, 1954; Desmond, 1954; Miller, 1975 and Mies, 1978.

The distribution of Apgar score at 5 minutes in different groups was seen. In Group A, 100% of babies had no depression. In Group B, 12.5% babies had mild depression and 87.5% had no depression. The p value is 0.0001, which is significant. So, there was a significant improvement in babies with severe depression (Apgar score 0-3) at 1 minute compared to 5 minute, Apgar score. In a study by Hogan et al, it was shown that a 5 minutes Apgar score <4 is a good proxy for asphyxia. The sensitivity of CTG was 72.34% and the specificity was 66.7%. In a similar study conducted by Prof. Dilsath, Meena "Admission test and its correlation with fetal outcome" the sensitivity of CTG was found to be 78%, and specificity as 87%.

CONCLUSION

We can conclude that RFM can be a complaint of any mother irrespective of her age and parity. It was seen that abnormal and suspicious CTG were more commonly associated with meconium-stained liquor at delivery; also they were associated with a higher rate of cesarean section with fetal distress being the

most common indication among these two groups. The incidence of stillbirth was 28.6% among the abnormal CTG group, which is quite high. The incidence of cord blood pH <7.2, low Apgar scores at 1 minute and 5 minutes were higher among the abnormal CTG group. The necessity for early intervention could be reduced in those patients with normal CTG. Also mothers with normal CTG were assured to some extent. In our study, we have found the sensitivity of CTG to be 72.3%.

Hence, we can say that RFM, if detected early and with the help of antepartum CTG, we can reduce the rate of perinatal mortality and IUFD. This can be done simply and CTG is more acceptable as it is a noninvasive procedure. So, in a country like India, mothers should be more adequately counseled about the importance of RFM and CTG so that pregnancy outcome can be optimized with adequate antenatal care and supervision. RFM is an important cause of adverse perinatal outcome and it may be a sign of CNS hypoxia and injury. By doing a CTG in mothers with complaint of RFM, we can find out whether actual fetal distress is present or not.

SUGGESTED READING

1. Marsál K. Ultrasonic assessment of fetal activity. Clin Obstet Gynaecol. 1983;10(3):541-63.
2. Rayburn WF. Fetal body movement monitoring. Obstet Gynecol Clin North Am. 1990;17(1):95-110.
3. Neldam S. Fetal movements as an indicator of fetal well-being. Dan Med Bull. 1983;30(4):274-8.
4. Grant A, Elbourne D, Valentin L, Alexander S. Routine formal fetal movement counting and risk of antepartum late death in normally formed singletons. Lancet. 1989;2(8659):345-9.
5. Harrington K, Thompson O, Jordan L, Page J, Carpenter RG, Campbell S. Obstetric outcome in women who present with a reduction in fetal movements in the third trimester of pregnancy. J Perinat Med. 1998;26(2):77-82.
6. Efkarpidis S, Alexopoulos E, Kean L, Liu D, Fay T. Case-control study of factors associated with intrauterine fetal deaths. MedGenMed. 2004;6(2):53.
7. Gillieson M, Dunlap H, Nair R, Pilon M. Placental site, parity, and date of quickening. Obstet Gynecol. 1984;64(1):44-5.
8. RCOG Release - Reduced Fetal Movements (New Green-top Guidelines).
9. Lenstrup C, Haase N. Predictive value of antepartum fetal heart rate non-stress test in high-risk pregnancy. Acta Obstet Gynecol Scand. 1985;64(2):133-8.
10. Chitra R, Neeru T. The role of admission test in intrapartum surveillance. In: Abstract 44th AICOG Conference, Ahmedabad; 2000. p. 36.
11. Kulkarni AA, Shrotri AN. Admission test: a predictive test for fetal distress in high risk labour. J Obstet Gynaecol Res. 1998;24(4):255-9.
12. Elimian A, Lawlor P, Figueroa R, Wiencek V, Garry D, Quirk JG. Intrapartum assessment of fetal well-being: any role for a fetal admission test? J Matern Fetal Neonatal Med. 2003;13(6):408-13.
13. Smith JH, Anand KJ, Cotes PM, Dawes GS, Harkness RA, Howlett TA, et al. Antenatal fetal heart rate variation in relation to the respiratory and metabolic status of the compromised human fetus. Br J Obstet Gynaecol. 1988;95(10):980-9.
14. Hogan L, Ingemarsson I, Thorngren-Jerneck K, Herbst A. How often is a low 5-min Apgar score in term newborns due to asphyxia? Eur J Obstet Gynecol Reprod Biol. 2007;130(2):169-75.

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Fractional Flow Reserve

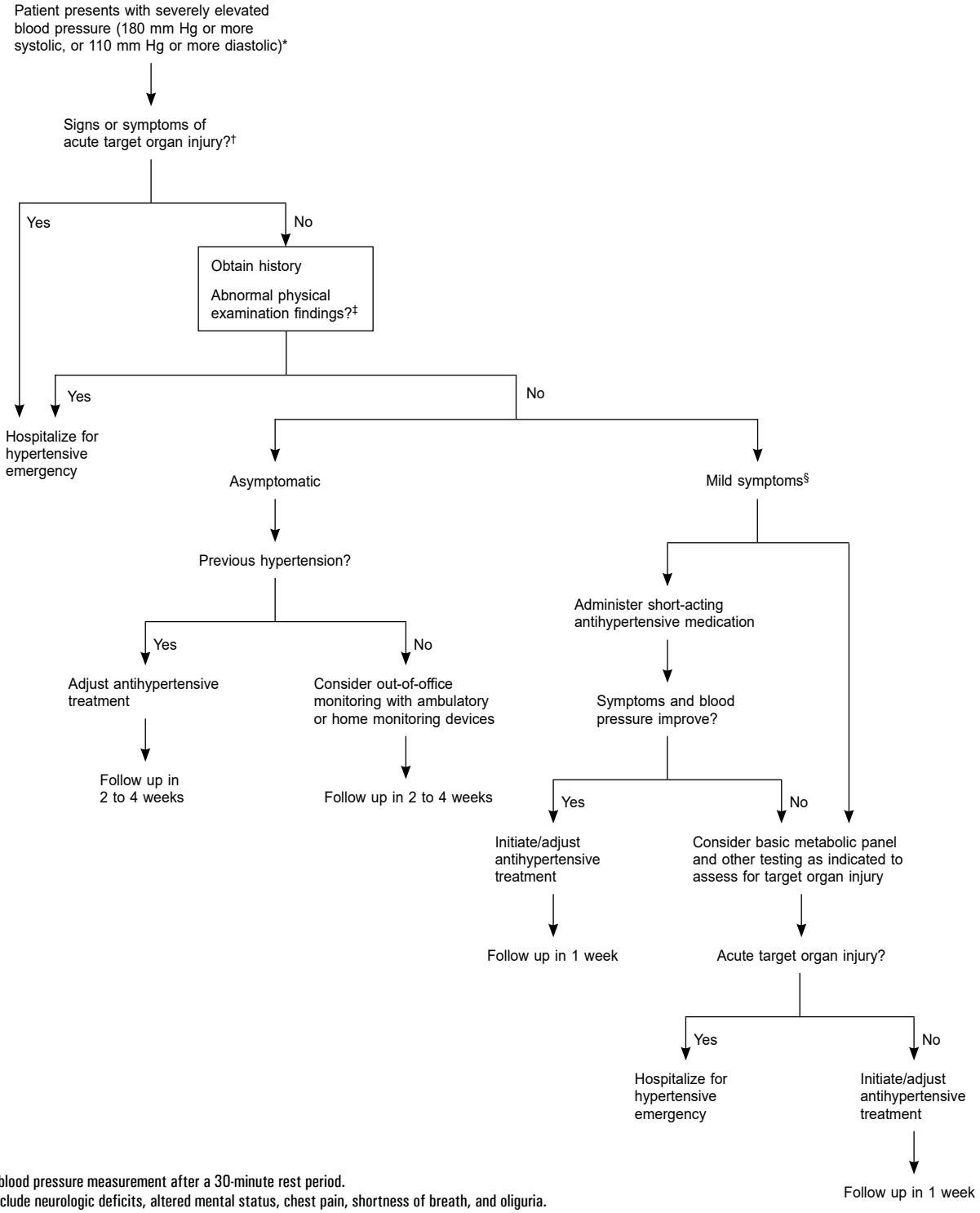
- Fractional flow reserve (FFR) compares the intracoronary pressure distal to the stented site (measured with a specially designed angioplasty guidewire) to the aortic root pressure measured through the guiding catheter during maximal hyperemic flow produced by bolus intracoronary adenosine injection or a continuous IV infusion.
- FFR cut-off value = 0.8.
- Percutaneous coronary intervention (PCI) of intermediate lesions can be safely deferred if the FFR is above the nonischemic value >0.8.

Coronary Stenosis of Intermediate Severity

Less than 40% to more than 80% diameter narrowing as assessed by visual inspection of the radiocontrast luminogram during coronary angiography, is seen in almost 40% of patients undergoing coronary arteriography.

ALGORITHM

Management of Severe Asymptomatic Hypertension



*Repeat blood pressure measurement after a 30-minute rest period.
†These include neurologic deficits, altered mental status, chest pain, shortness of breath, and oliguria.
‡New sensory/motor deficits, arteriolar hemorrhage/papilledema, S3 heart sound, rales, jugular venous distention, pulsating abdominal bruit.
§Headache, lightheadedness, dyspnea, anxiety, epistaxis, nausea, palpitations.

Source: Adapted from Am Fam Physician. 2017;95(8):492-500.

How Important a Risk Factor is Systolic Blood Pressure?

KK AGGARWAL

It has been shown in cross-sectional and longitudinal population studies that systolic blood pressure (SBP) increases with age, while diastolic blood pressure (DBP) rises until 50 years of age and then levels off or even slightly decreases. Consequently, with increasing age, there is a shift from diastolic pressure to systolic pressure and then to pulse pressure as the predominant predictor of cardiovascular risk.[1]

Both observational studies and clinical trial data suggest that poor SBP control is largely responsible for the unacceptably low rates of overall BP control.[2] In 1969, the Framingham Heart Study first noted that systolic hypertension was related to increased cardiovascular risk.[3] Staessen et al found that a 10 mmHg rise in systolic hypertension was correlated with a 10% increase in all fatal and nonfatal cardiovascular complications. DBP, on the other hand, was inversely correlated with total and cardiovascular mortality.[4,5]

In the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) and Controlled Onset Verapamil Investigation of Cardiovascular End Points (CONVINCE) trial, DBP control rates exceeded 90%, but SBP control rates were considerably less (60-70%).[6,7] Poor SBP control has also been partly related to physician attitudes. A multi-ethnic population sample of adults at or above 40 years old was surveyed, by random digit phone dialling in a major metropolitan area, regarding BP measurement and hypertension awareness and treatment status. The survey concluded that community physicians do not give equal weight to SBP >140 mmHg as to DBP >90 mmHg in diagnosing hypertension and intensifying treatment.

A visit-level analysis indicated that when DBP was >90 mmHg, physicians intensified drug therapy 24% of the time, but intensification actions occurred in only 4% of visits when SBP was <140 mmHg and DBP was <90 mmHg.[8] Observational epidemiologic studies and randomized controlled trials have demonstrated that SBP is an independent and strong predictor of risk of cardiovascular and renal disease. The association between SBP and risk of coronary heart disease, stroke and end-stage renal disease is continuous, graded and independent.[9] Elevated SBP is even more associated with cardiovascular morbidity and mortality than DBP.[10]

Clinical trials have demonstrated that control of isolated systolic hypertension reduces total mortality, cardiovascular mortality, stroke and heart failure events.[11-13]

Hence, greater emphasis must clearly be placed on managing systolic hypertension in order to check the rising burden of cardiovascular and renal disease.

REFERENCES

1. Nawrot T, Den Hond E, Thijs L, Staessen JA. Isolated systolic hypertension and the risk of vascular disease. Curr Hypertens Rep. 2003;5(5):372-9.
2. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL Jr, et al; National Heart, Lung, and Blood Institute Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure; National High Blood Pressure Education Program Coordinating Committee. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: the JNC 7 report. JAMA. 2003;289(19):2560-72.
3. Kannel WB. Elevated systolic blood pressure as a cardiovascular risk factor. Am J Cardiol. 2000;85(2):251-5.
4. Staessen JA, Gasowski J, Wang JG, Thijs L, Den Hond E, Boissel JP, et al. Risks of untreated and treated isolated systolic hypertension in the elderly: meta-analysis of outcome trials. Lancet. 2000;355(9207):865-72.
5. Tin LL, Beevers DG, Lip GY. Systolic vs diastolic blood pressure and the burden of hypertension. J Hum Hypertens. 2002;16(3):147-50.
6. Cushman WC, Ford CE, Cutler JA, Margolis KL, Davis BR, Grimm RH, et al; ALLHAT Collaborative Research Group. Success and predictors of blood pressure control in diverse North American settings: the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack

Group Editor-in-Chief, IJCP Group

IJCP SUTRA 609: Reduce your saturated fats intake to less than 7% of calories. Your diet should include oily fish at least twice a week as a source for omega-3 fatty acids.

Trial (ALLHAT). J Clin Hypertens (Greenwich). 2002;4(6): 393-404.

7. Black HR, Elliott WJ, Neaton JD, Grandits G, Grambsch P, Grimm RH Jr, et al. Baseline characteristics and early blood pressure control in the CONVINCE trial. Hypertension. 2001;37(1):12-8.
8. Hyman DJ, Pavlik VN, Vallbona C. Physician role in lack of awareness and control of hypertension. J Clin Hypertens (Greenwich). 2000;2(5):324-30.
9. He J, Whelton PK. Elevated systolic blood pressure as a risk factor for cardiovascular and renal disease. J Hypertens Suppl. 1999;17(2):S7-13.
10. Duprez D. Treatment of isolated systolic hypertension in the elderly. Expert Rev Cardiovasc Ther. 2012;10(11): 1367-73.
11. Kostis JB, Davis BR, Cutler J, Grimm RH Jr, Berge KG, Cohen JD, et al. Prevention of heart failure by antihypertensive drug treatment in older persons with isolated systolic hypertension. SHEP Cooperative Research Group. JAMA. 1997;278(3):212-6.
12. SHEP Cooperative Research Group. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. Final results of the Systolic Hypertension in the Elderly Program (SHEP). JAMA. 1991;265(24):3255-64.
13. Staessen JA, Thijs L, Fagard R, O'Brien ET, Clement D, de Leeuw PW, et al. Predicting cardiovascular risk using conventional vs ambulatory blood pressure in older patients with systolic hypertension. Systolic Hypertension in Europe Trial Investigators. JAMA. 1999;282(6): 539-46.

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Make sure

DURING MEDICAL PRACTICE

SITUATION: A patient with isolated systolic hypertension and LVH on atenolol developed a stroke.



© IJCP GROUP

LESSON: Make sure to remember that losartan-based treatment is more effective than an atenolol-based treatment for patients with isolated systolic hypertension and a high risk for stroke as shown in the Losartan Intervention For Endpoint reduction in hypertension (LIFE) study. The incidence of any stroke (40% risk reduction [RR], p = 0.02), fatal stroke (70% RR, p = 0.035) and atherothrombotic stroke (45% RR, p = 0.022) was significantly lower in losartan-treated compared to the atenolol-treated patients.

J Clin Hypertens (Greenwich). 2005;7(3):152-8.

Every citizen of India should have the right to accessible, affordable, quality and safe heart care irrespective of his/her economical background

HEART CARE FOUNDATION OF INDIA
A Not-For-Profit Organisation

Sameer Malik Heart Care Foundation Fund

An Initiative of Heart Care Foundation of India

E-219, Greater Kailash, Part I, New Delhi - 110048 E-mail: heartcarefoundationfund@gmail.com Helpline Number: +91 - 9958771177

"No one should die of heart disease just because he/she cannot afford it"

About Sameer Malik Heart Care Foundation Fund

"Sameer Malik Heart Care Foundation Fund" it is an initiative of the Heart Care Foundation of India created with an objective to cater to the heart care needs of people.

Objectives

- Assist heart patients belonging to economically weaker sections of the society in getting affordable and quality treatment.
- Raise awareness about the fundamental right of individuals to medical treatment irrespective of their religion or economical background.
- Sensitize the central and state government about the need for a National Cardiovascular Disease Control Program.
- Encourage and involve key stakeholders such as other NGOs, private institutions and individual to help reduce the number of deaths due to heart disease in the country.
- To promote heart care research in India.
- To promote and train hands-only CPR.

Activities of the Fund

Financial Assistance

Financial assistance is given to eligible non emergent heart patients. Apart from its own resources, the fund raises money through donations, aid from individuals, organizations, professional bodies, associations and other philanthropic organizations, etc.

After the sanction of grant, the fund members facilitate the patient in getting his/her heart intervention done at state of art heart hospitals in Delhi NCR like Medanta – The Medicity, National Heart Institute, All India Institute of Medical Sciences (AIIMS), RML Hospital, GB Pant Hospital, Jaipur Golden Hospital, etc. The money is transferred directly to the concerned hospital where surgery is to be done.

Drug Subsidy

The HCFI Fund has tied up with Helpline Pharmacy in Delhi to facilitate patients with medicines at highly discounted rates (up to 50%) post surgery.

The HCFI Fund has also tied up for providing up to 50% discount on imaging (CT, MR, CT angiography, etc.)

Who is Eligible?

All heart patients who need pacemakers, valve replacement, bypass surgery, surgery for congenital heart diseases, etc. are eligible to apply for assistance from the Fund. The Application form can be downloaded from the website of the Fund. http://heartcarefoundationfund.heartcarefoundation.org and submitted in the HCFI Fund office.

Important Notes

- The patient must be a citizen of India with valid Voter ID Card/ Aadhaar Card/Driving License.
- The patient must be needy and underprivileged, to be assessed by Fund Committee.
- The HCFI Fund reserves the right to accept/reject any application for financial assistance without assigning any reasons thereof.
- The review of applications may take 4-6 weeks.
- All applications are judged on merit by a Medical Advisory Board who meet every Tuesday and decide on the acceptance/rejection of applications.
- The HCFI Fund is not responsible for failure of treatment/death of patient during or after the treatment has been rendered to the patient at designated hospitals.
- The HCFI Fund reserves the right to advise/direct the beneficiary to the designated hospital for the treatment.
- The financial assistance granted will be given directly to the treating hospital/medical center.
- The HCFI Fund has the right to print/publish/webcast/web post details of the patient including photos, and other details. (Under taking needs to be given to the HCFI Fund to publish the medical details so that more people can be benefitted).
- The HCFI Fund does not provide assistance for any emergent heart interventions.

Check List of Documents to be Submitted with Application Form

- Passport size photo of the patient and the family
- A copy of medical records
- Identity proof with proof of residence
- Income proof (preferably given by SDM)
- BPL Card (If Card holder)
- Details of financial assistance taken/applied from other sources (Prime Minister's Relief Fund, National Illness Assistance Fund Ministry of Health Govt of India, Rotary Relief Fund, Delhi Arogya Kosh, Delhi Arogya Nidhi), etc., if anyone.

Free Diagnostic Facility

The Fund has installed the latest State-of-the-Art 3 D Color Doppler EPIQ 7C Philips at E – 219, Greater Kailash, Part 1, New Delhi.
This machine is used to screen children and adult patients for any heart disease.

Free Education and Employment Facility

HCFI has tied up with a leading educational institution and an export house in Delhi NCR to adopt and to provide free education and employment opportunities to needy heart patients post surgery. Girls and women will be preferred.

Laboratory Subsidy

HCFI has also tied up with leading laboratories in Delhi to give up to 50% discounts on all pathological lab tests.

Help Us to Save Lives

The Foundation seeks support, donations and contributions from individuals, organizations and establishments both private and governmental in its endeavor to reduce the number of deaths due to heart disease in the country. All donations made towards the Heart Care Foundation Fund are exempted from tax under Section 80 G of the IT Act (1961) within India. The Fund is also eligible for overseas donations under FCRA Registration (Reg. No 231650979). The objectives and activities of the trust are charitable within the meaning of 2 (15) of the IT Act 1961.

Donate Now...

About Heart Care Foundation of India

Heart Care Foundation of India was founded in 1986 as a National Charitable Trust with the basic objective of creating awareness about all aspects of health for people from all walks of life incorporating all pathies using low-cost infotainment modules under one roof.

HCFI is the only NGO in the country on whose community-based health awareness events, the Government of India has released two commemorative national stamps (Rs 1 in 1991 on Run For The Heart and Rs 6.50 in 1993 on Heart Care Festival- First Perfect Health Mela). In February 2012, Government of Rajasthan also released one Cancellation stamp for organizing the first mega health camp at Ajmer.

Objectives

- Preventive Health Care Education
- Perfect Health Mela
- Providing Financial Support for Heart Care Interventions
- Reversal of Sudden Cardiac Death Through CPR-10 Training Workshops
- Research in Heart Care

Heart Care Foundation Blood Donation Camps

The Heart Care Foundation organizes regular blood donation camps. The blood collected is used for patients undergoing heart surgeries in various institutions across Delhi.

Committee Members



Chief Patron

Raghu Kataria

Entrepreneur



President

Dr KK Aggarwal

Padma Shri, Dr BC Roy National & DST National Science Communication Awardee

Governing Council Members

Sumi Malik
Vivek Kumar
Karna Chopra
Dr Veena Aggarwal
Veena Jaju
Naina Aggarwal
Nilesh Aggarwal
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Advisors

Mukul Rohtagi
Ashok Chakradhar

Executive Council Members

Deep Malik
Geeta Anand
Dr Uday Kakroo
Harish Malik
Aarti Upadhyay
Raj Kumar Daga
Shalin Kataria
Anisha Kataria
Vishnu Sureka
Rishab Soni



This Fund is dedicated to the memory of **Sameer Malik** who was an unfortunate victim of sudden cardiac death at a young age.

- HCFI has associated with Shree Cement Ltd. for newspaper and outdoor publicity campaign
- HCFI also provides Free ambulance services for adopted heart patients
- HCFI has also tied up with Manav Ashray to provide free/highly subsidized accommodation to heart patients & their families visiting Delhi for treatment.

http://heartcarefoundationfund.heartcarefoundation.org

Important Health-related Judgments of the Year 2018

KK AGGARWAL*, IRA GUPTA†

SINGLE PARENT/UNWED MOTHER REQUIRED TO FURNISH AN AFFIDAVIT ONLY WHILE APPLYING FOR BIRTH CERTIFICATE FOR A CHILD BORN FROM HER WOMB

The Hon'ble Supreme Court of India in the matter titled as "ABC versus The State (NCT of Delhi), SLP (Civil) No. 28367/2011" has considered the issue whether it is imperative for an unwed mother to specifically notify the putative father of the child whom she has given birth to of her petition for appointing as the guardian of her child. The Hon'ble Apex Court has held that if a single parent/unwed mother applies for the issuance of a Birth Certificate for a child born from her womb, the Authorities concerned may only require her to furnish an affidavit to this effect, and must thereupon issue the Birth Certificate, unless there is a Court direction to the contrary.

Commissioning Mother Entitled for Maternity Leave in Case of Surrogacy - The Department of Personnel and Training of Ministry of Personnel, Public Grievances and Pensions, Government of India has vide office memorandum bearing No. 13018/6/2013 -Estt.(L) vide dated 29 January, 2018 has instructed all Ministries/ Departments to give wide publicity and to implement the directions given by the Hon'ble High Court of Delhi in the order dated 17th July, 2015 in the Writ Petition No. 844/2014 titled as Ms Rama Pandey, Teacher, Kendriya Vidyalaya V/s UoI & Others wherein it was held that a female employee, who is the commissioning mother, would be entitled to apply for maternity leave under sub-rule (1) of Rule 43.

PHARMACEUTICAL COMPANIES CAN CLAIM DEDUCTIONS IN INCOME TAX ON PROMOTIONS TO DOCTORS

The Hon'ble Income Tax Appellate Tribunal, Pune Bench in the matter titled as "Emcure Pharmaceuticals Limited versus DCIT, Central Circle 2(1), Pune, ITA No. 1532/ Pune/2015" dealt with the issue of deductions in income tax claimed by the pharmaceutical companies on the sales and promotions to doctors. The CBDT Circular No. 5/2012, dated 01-08-2012, which stipulates that the claim of such expenditure constitutes the violation of the circular issued by the said Medical Council of India (MCI) enlarging the scope of disallowance to the pharmaceutical companies is without any enabling notification or circular of the MCI.

The pharmaceutical companies do not come under the purview of Medical Council of India and the notification of the MCI thereby barring the doctors from accepting any gifts, etc., from any pharmaceuticals companies or their allies is not applicable on pharmaceuticals companies.

RIGHT TO DIE WITH DIGNITY IS A FUNDAMENTAL RIGHT UNDER ARTICLE 21 OF CONSTITUTION OF INDIA AND PASSIVE EUTHANASIA AND ADVANCE MEDICAL DERIVATIVES/LIVING WILL HAVE BEEN RECOGNIZED

In the landmark judgment titled as "Common Cause versus Union of India, 2018 (5) SCC 1" passed by the Hon'ble Constitution Bench of 4 Judges of the Supreme Court of India, it has duly held that the right to die with dignity is a fundamental right. Further, it was held that advance medical directives are legal in India.

Further in the said judgment, the Hon'ble Apex Court has laid down certain guidelines and directions w.r.t. advance medical directives which shall remain in force till the Parliament makes legislation on this subject. Also, it was held that in active euthanasia, a specific overt act is done to end the patient's life whereas in passive euthanasia, something is not done which is necessary for preserving a patient's life. It is due to this difference that most of the countries across the world have legalized passive euthanasia either by legislation or by judicial interpretation with certain conditions and safeguards.

HON'BLE DIVISION BENCH OF ALLAHABAD HIGH COURT ISSUED DIRECTIONS TO UP STATE GOVERNMENT TO IMPROVE MEDICAL FACILITIES IN THE HOSPITALS MAINTAINED BY THE STATE GOVERNMENT

In the Writ Petition titled as "Sneh Lata Singh & Others versus State of UP & Others, PIL No. 14588 of 2009" and in "Raj Kumar Singh versus State of UP bearing PIL No. 65217 of 2008", the Hon'ble Division Bench of the High

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†Advocate & Legal Advisor, HCFI

Court of Allahabad vide judgment dated 09.03.2018 has issued various directions to the State Government, Uttar Pradesh through Chief Secretary for improving the medical facilities in the hospitals maintained by the State Government.

A NUMBER OF UNQUALIFIED, UNTRAINED QUACKS ARE POSING A GREAT RISK TO THE ENTIRE SOCIETY AND PLAYING WITH THE LIVES OF PEOPLE WITHOUT HAVING THE REQUISITE TRAINING AND EDUCATION IN THE SCIENCE FROM APPROVED INSTITUTIONS

In the matter titled as "Kerala Ayurveda Paramparya Vaidya Forum Vs State of Kerala and Others", Civil Appeal 897/2009, the Hon'ble Supreme Court comprising of bench of Hon'ble Mr Justice R. K. Aggarwal and Hon'ble Mr Justice Mohan M. Shantanagoudar vide judgment dated 13.04.2018 has held that the persons who do not fulfill the prescribed qualification and are not duly registered under the relevant Statute, cannot be permitted to practice as 'Paramparya Vaidyas'.

MEDICAL REIMBURSEMENT CLAIM OF PENSIONER OF GOVERNMENT OF INDIA FOR THE TREATMENT TAKEN BY HIM IN A PRIVATE AND NON-EMPANELLED HOSPITAL ALLOWED

The Hon'ble Supreme Court of India comprising of the Bench of HMJ R. K. Aggarwal and HMJ Ashok Bhushan in the matter titled as "Shiva Kant Jha versus Union of India, Writ Petition (Civil) No. 694/2015", vide judgment dated 13.04.2018 has allowed the petition filed by the petitioner against the alleged unfair treatment meted out to several retired government servants in their old age and their state of affairs pertaining to reimbursement of medical claims under the Central Government Health Scheme (CGHS). Accordingly, the Hon'ble Apex Court has allowed the medical reimbursement claim of the pensioner of Government of India for the treatment undertaken by him in a private or non-empanelled hospital.

THREAT TO THE RIGHT OF 'CHOICE' OF A PERSON AND THEREBY RIGHT TO LIFE, LIBERTY, PRIVACY AND DIGNITY CAN VERY WELL COME FROM THE PERSON'S OWN PARENTS IRRESPECTIVE OF THE AGE AND GENDER OF SUCH PERSON

The Hon'ble Division Bench of High Court of Delhi comprising of HMJ S. Murlidhar and HMJ C. Hari Shankar in the matter titled as "Dr Sangamitra Acharya & Anr. Versus State (NCT of Delhi) & Others, Writ Petition (Crl.) No. 1804/2017" while dealing with important questions involving interpretation of the relevant provisions of the Mental Health Act, 1987 (MHA) in light of the right to life, liberty, dignity and in light of the right to privacy and autonomy of an adult female, as guaranteed in the Constitution of India has vide judgment dated 18.04.2018 held that the procedure for involuntary admission under Section 19 MHA is only applicable when the person has been found to be mentally ill as required by law and a satisfaction has been reached to that end. Admitting a person under Section 19 MHA merely for observation cannot be countenanced as doing so would be in violation of a person's rights to life, liberty, and dignity granted under Article 21 of the Constitution of India.

MADHYA PRADESH MEDICAL SCIENCE UNIVERSITY ALLOWS 'HINGLISH' IN EXAMINATIONS - BE PREPARED FOR 'HART KA DAURA' INSTEAD OF 'HEART ATTACK'

The Madhya Pradesh Medical Science University (MPMSU) has officially allowed the use of 'Hinglish' (a mix of Hindi and English) in all its written and oral examinations. A circular issued by the varsity on May 26, 2018 said: "Following a detailed discussion, the board of studies has decided that students of all colleges will have the option to answer questions in their examinations in English, Hinglish (a mixture of Hindi and English) and Hindi".

UTTARAKHAND HIGH COURT ISSUES DIRECTIONS IN PIL RELATING TO MOLESTATION, RAPE, HARASSMENT AND VICTIMIZATION OF NARI NIKETAN INMATES

In the matter titled as "Shivangi Gangwar versus State & Others, Writ Petition (PIL) No. 07 of 2016", the Hon'ble Division Bench of High Court of Uttarakhand at Nainital consisting of HMJ Rajiv Sharma and HMJ Sharad Kumar Sharma dealt with an important public issue relating to the molestation, rape, harassment and victimization of Nari Niketan inmates in the State of Uttarakhand, more particularly, in Nari Niketan, Kedrapuram, Dehradun and has issued various mandatory directions for ensuring protection of the children admitted in the Child Care institutions in the State.

DELHI HIGH COURT FORMS COMMITTEE TO TACKLE PLASTIC POLLUTION IN COURTS

While laying emphasis on the need to preserve the environment, Hon'ble Delhi High Court Acting Chief Justice Ms Gita Mittal stated that immediate steps need to be taken to minimize plastic utilization, especially single-use of the plastic items including the pens and the other stationery items, in Courts.

COMPENSATION SCHEME FOR WOMEN VICTIMS/SURVIVORS OF SEXUAL ASSAULT/OTHER CRIMES - 2018 BY NATIONAL LEGAL SERVICES AUTHORITY (NALSA)

The Hon'ble Supreme Court of India in the Writ Petition bearing W.P. (C) No. 565/2012 titled "Nipun Saxena Vs. Union of India" opined that "it would be appropriate if NALSA sets up a Committee of about 4 or 5 persons who can prepare model rules for victim compensation for sexual offences and acid attacks taking into account the submissions made by the learned Amicus.

The learned Amicus as well as the learned Solicitor General have offered to assist the Committee as and when required. The Chairperson or the nominee of the Chairperson of the National Commission for Women should be associated with the Committee."

CAPPING OF THE FEES FOR MEDICAL STUDENTS AT DEEMED MEDICAL UNIVERSITIES IN TAMIL NADU

In the Writ Petition by way of public interest titled as "Jawaharlal Shanmugam versus State of Tamil Nadu & Others, bearing Writ Petition No. 16785/2017" vide judgment dated 08.06.2018, the Hon'ble High Court of Madras has held that the fees varying between Rs. 25 lakhs and Rs. 35 lakhs per annum is, prima facie, far too high and the Fee Committee constituted by the University Grants Commission (UGC) ought to make an in-depth study and recommend the fees to be charged by the deemed universities.

Further, the Hon'ble High Court of Madras has held that the students shall be admitted to the deemed universities subject to payment of Rs. 13 lakhs, on the condition that after the fee committee determines the fees, if the fee is found to be higher than Rs. 13 lakhs per annum, then the concerned students will have to pay the balance amount. And if the fees is determined to be lower, then the concerned students will be entitled to refund.

UTTARAKHAND HIGH COURT HELD THAT COST OF MEDICAL EXPENSES OF SENIOR CITIZEN IN CASE OF EMERGENCY TO BE BORNE BY THE STATE GOVERNMENT

In the PIL titled as "Senior Citizen Welfare Organisation & another versus State of Uttarakhand & another, bearing Writ Petition (PIL) No. 52 of 2013", the Hon'ble Division Bench of the High Court of Uttarakhand, Nainital Bench while dealing with the petition which was filed for protecting the rights of the senior citizen as per the provisions of the Maintenance and Welfare of the Parents and Senior Citizens Act, 2007, the Hon'ble High Court has vide judgment dated 12.06.2018 held that the senior citizens in case of emergency shall be taken to the nearest hospital for treatment and the cost of conveyance shall be borne by the State Government including the medical expenditure as well as of ambulance.

REFERRING THE PATIENT TO A HIGHER CENTRE IS NOT MEDICAL NEGLIGENCE

In the matter titled as "Suman Taneja versus Metro Hospital & Heart Institute & Others" bearing Complaint Case No. 1499/2015, the Hon'ble National Consumer Disputes Redressal Commission (NCDRC) has vide judgment dated 02.02.2016 dismissed the consumer complaint filed by the complainant seeking compensation of Rs. 2.5 crores.

While dismissing the said consumer complaint, the Hon'ble Commission has held that referring the patient to the higher centre is not a medical negligence and also that the doctors should not be dragged to court unnecessarily on frivolous grounds, which prevent them from discharging their duty to a suffering person who needs their assistance utmost.

KERALA HIGH COURT HAS HELD THAT IMAGE OF MOTHER FEEDING THE BABY IS NOT PRURIENT OR OBSCENE

In the matter titled as "Felix MA versus P. V. Gangadharan, Writ Petition No. 7778/2018", the Hon'ble High Court of Kerala at Ernakulam vide judgment dated 08.03.2018 has held that the image of the mother breastfeeding the baby is not prurient or obscene. The Writ Petition was filed by the Petitioner against the cover page of the magazine depicting a mother feeding her baby exposing her bosom.

UTTARAKHAND HC DIRECTS PETROL PUMPS TO PROVIDE FREE OF COST DRINKING WATER AND TOILET FACILITIES TO THE COMMUTERS

The Hon'ble High Court of Uttarakhand has directed petrol pump owners to provide drinking water to commuters free of cost and put up signboards of reasonable size to inform commuters about the facilities. Hon'ble Division Bench ruled that District Supply Officers will be personally liable for noncompliance of its order.

IJCP SUTRA 613: Avoid alcohol and drugs. Substance use can worsen many symptoms of PTSD, interfere with treatment and add to other problems.

PLASTICS AND THERMOCOL PRODUCTS BANNED IN MAHARASHTRA W.E.F. 23RD JUNE, 2018

Maharashtra State Government has enforced the "Maharashtra Plastic and Thermocol Products (Manufacture, Usage, Sale, Transport, Handling and Storage) Notification, 2018" Notification No. Plastic-2018/ C.R. No. 24/TC-4 dated 23.03.2018, which was issued by the Environment Department with effect from 23.06.2018 thereby banning the use of plastic bags with handle and without handle, and the disposable products manufactured from plastic and thermocol (polystyrene) such as single use disposable dish, cups, plates, glasses, fork, bowl, container, disposable dish/bowl used for packaging food in hotels, spoon, straw, non-woven polypropylene bags, cups/pouches to store liquid, packaging with plastic to wrap or store the products, packaging of food items and food grain material, etc.

COMPLETE AUTISTIC CHILD'S PASSPORT PROCEDURE AND INTERVIEW AT HIS HOME: BOMBAY HIGH COURT TO AUTHORITIES

In the matter titled as "Children of the World India Trust And Debbie Jean Childs", bearing Foreign Adoption Petition No. 22 of 2018 with Judge's order No. 128 of 2018, the Hon'ble Bombay High Court vide judgment dated 27.06.2018 has allowed the unusual foreign adoption petition and has directed the Regional Passport Office to take necessary interviews or complete the necessary procedure at the residence of the autistic child where he is more comfortable.

ERADICATION OF LEPROSY POLICY: SUPREME COURT ISSUES DIRECTIONS TO CENTRE AND STATES TO REHABILITATE PATIENTS

On 14.09.2018, the Hon'ble Apex Court Bench comprising of Hon'ble Chief Justice Dipak Misra, Hon'ble Justice A M Khanwilkar and Hon'ble Justice D Y Chandrachud issued a slew of directions to the Centre and all States for the eradication of Leprosy and rehabilitation of its patients. The Bench stated, "Medical Staff in Private and Government hospitals be sensitized to ensure that Leprosy patients do not face discrimination." Hon'ble Apex Court further remarked that Awareness Campaign should be launched so that leprosy patients do not get isolated and are allowed to lead a normal married life.

HON'BLE SUPREME COURT DIRECTS PRIVATE HOSPITAL TO PROVIDE FREE TREATMENT TO POOR PATIENTS

In the matter titled as "Union of India versus Mool Chand Khairati Ram Trust, Civil Appeal Bearing No. 3155 of 2017", the Hon'ble Supreme Court of India vide judgment dated 09.07.2018 while dealing with the issue of validity of the Circular issued by the Government of NCT of Delhi (GNCTD) on 2.2.2012 whereby it intimated the hospitals to implement the judgment of Delhi High Court with regard to free treatment to the weaker sections of the society in terms of the judgment dated 22.3.2007 in the case of Social Jurists v. Government of NCT of Delhi & Ors., has held that the hospitals in question i.e., Moolchand Hospital, St. Stephens Hospital, Sitaram Bhartia Hospital, Foundation of Cancer Research and other similarly situated hospitals shall scrupulously observe the conditions framed in the order/circular dated 02.02.2012 and in case violation is reported the same shall be viewed sternly and the lease shall be cancelled.

DELHI HIGH COURT EMPHASIZES ON NEED TO HAVE FIXED WORKING HOURS FOR DOCTORS AND STANDARD FOR DOCTOR-PATIENT RATIO IN HOSPITALS

The Hon'ble High Court of Delhi comprising of Acting Chief Justice Gita Mittal and Justice C Hari Shankar acknowledged that doctors have to work for excessive hours in absence of prescribed standard working hours.Delhi HC took note of report prepared by the National Accreditation Board for Hospitals (NABH), which is a Private Body which falls under Quality Council of India (QCI).

SUPREME COURT: "ABORTING A HEALTHY FETUS IS AKIN TO MURDER", REJECTS PLEA TO TERMINATE 25-WEEK PREGNANCY

The Hon'ble Supreme Court has on 16.07.2018 flatly denied a 20-year-old woman permission to terminate her 25-week-old pregnancy, observing that aborting a healthy fetus that is unlikely to affect the mother's physical health amounted to murder. In her petition before the Hon'ble Supreme Court, the Mumbai-based woman pleaded that she would suffer from mental trauma if she went ahead with the "unwanted pregnancy".

BOMBAY HIGH COURT ASKS STATE GOVERNMENT TO ENCOURAGE PVT. DOCTORS TO ASSIST IN CIVIL HOSPITALS BY WAY OF CHARITY FOR BENEFIT OF POOR PATIENTS

The Hon'ble Bombay High Court Bench comprising of Justice NH Patil and Justice GS Kulkarni said that Government's exercise of getting such doctors to serve at the Malegaon Civil Hospital (in Nashik district)

should be followed as a 'model' in other districts. Hon'ble Bench was hearing a PIL filed by a resident of Malegaon town, alleging inaction on part of Public Health Department and local civic body in filling the vacancies for the doctors and Assistant Medical staff at the Malegaon Civic Hospital for years.

DELHI HIGH COURT: DON'T INSIST ON DOCUMENTS LIKE AADHAAR TO GIVE BENEFITS OF MATERNITY SCHEMES

On 25.07.2018, the Hon'ble Delhi High Court said there was no legal basis for the AAP Govt. to insist on documents like Aadhaar and bank passbooks, to provide maternity scheme benefits to pregnant and lactating women in the city. A Bench of Hon'ble Acting Chief Justice Gita Mittal and HMJ C Hari Shankar asked the Delhi Govt. not to insist on such documents for providing benefits to those eligible under maternity schemes like Janani Suraksha Yojana (JSY). The HC also directed the Govt. to widely publicize the benefits of such schemes and the requirements for registration as many women appeared unaware about them.

HON'BLE SUPREME COURT ON FEMALE GENITAL MUTILATION: WE CAN'T DIRECT DOCTORS TO PERFORM GENITAL MUTILATION ON MINOR GIRLS

On 31.07.2018, the Hon'ble Supreme Court made it clear that it cannot direct doctors to perform genital mutilation of minor girls of Dawoodi Bohra Muslim Community and questioned "scientific justification", if any, behind the procedure. Hon'ble Apex Court Bench headed by the then Hon'ble CJI Dipak Misra and also comprising Hon'ble Justice A M Khanwilkar and Hon'ble Justice D Y Chandrachud, was hearing a PIL challenging the practice, questioned the process stating that there was hardly any rationale behind it as a girl child is forced to undergo it due to nonmedical reasons.

DELHI HIGH COURT: UNSUCCESSFUL STERILIZATION OPERATION DOES NOT MEAN MEDICAL NEGLIGENCE, IF THE PATIENT AND HER RELATIVES WERE INFORMED ABOUT CHANCES OF ITS FAILURE

In the matter titled as "Lok Nayak Hospital versus Prema, RFA No. 56/2006", the Hon'ble High Court of Delhi vide judgment dated 06.08.2018 has held that medical negligence is not proved in case of unsuccessful sterilization operation, if the doctor/hospital has duly got the consent form and other forms signed by the patient and counter signed by her relatives in which it was specifically mentioned by the doctor/hospital that the operation need not be always successful and there are always some chances of failure, and if the operation is not successful the hospital or the concerned doctor will not be held responsible.

DELHI HIGH COURT HAS DIRECTED MCI TO FRAME SENTENCING POLICY FOR DELINQUENT DOCTORS

In the matter titled as "Ravi Rai versus Medical Council of India, WP(C) No.10506/2017 and WP(C) No. 10625/2017", the Hon'ble High Court of Delhi vide order dated 20.08.2018 has directed MCI to frame sentencing policy for delinquent doctors for the infractions committed by them and the said sentencing policy shall be a guidance for the Committee, which are tasked with job of returning recommendations both on the guilt and punishment to be accorded to a delinquent doctor.

SUPREME COURT STRIKES DOWN KERALA MEDICAL ORDINANCE WHICH SOUGHT TO REGULARIZE ADMISSIONS EARLIER CANCELLED BY SC

Vide judgment dated 12.09.2018 passed by the Hon'ble Supreme Court in the matter titled as "Medical Council of India versus State of Kerala & others, Writ Petition No. 231/2018", the Hon'ble Supreme Court has declared the Kerala Professional Colleges (Regularisation of Admission in Medical Colleges) Ordinance, 2017 to be ultra vires and entrenching upon the field earmarked for the judiciary as it sought to nullify the judgment and order passed by the High Court and by this Court.

SUFFERING OF AILMENT BY THE PATIENT AFTER SURGERY DOES NOT SIMPLY MEAN MEDICAL NEGLIGENCE

In the matter titled as "Dr S. K. Jhunjhunwala versus Mrs Dhanwanti Kumar & Anr.", the Hon'ble Supreme Court of India vide judgment dated 01.10.2018 has held that simply proving the suffering of ailment by the patient after the surgery does not amount to medical negligence. The doctor can be held for medical negligence only if the suffering of any such ailment is because of improper performance of the surgery and that too with the degree of negligence on the part of the doctor.

ONLY CRACKERS WITH REDUCED EMISSION (IMPROVED CRACKERS) AND GREEN CRACKERS ARE ALLOWED BY HON'BLE SUPREME COURT

Vide judgment dated 23.10.2018 the Hon'ble Supreme Court of India in the matter titled as "Arjun Gopal & others versus Union of India & Others" has permitted

the crackers with reduced emission (improved crackers) and green crackers to be manufactured and sold. The manufacture, sale and use of joined firecrackers (series crackers or laris) has been banned by the Hon'ble Apex Court as the same causes huge air, noise and solid waste problems.

HOMOSEXUALS HAVING LIVE-IN RELATIONSHIP IS NOT CRIME: KERALA HIGH COURT

In a string of progressive judgments being passed by the Indian Judiciary, the High Court of Kerala in a recent case has allowed lesbian couple to lead a live-in relationship noting that the same is not a crime or contrary to any India law. In the case titled as "Sreeja S. versus The Commissioner of Police", the seminal and intriguing issue that fell for consideration before the High Court of Kerala was "whether persons of same gender are entitled to lead a 'live-in relationship'?

SUPREME COURT: IF THERE IS CONFLICT BETWEEN HEALTH AND WEALTH, THEN HEALTH WILL HAVE TO BE GIVEN PRECEDENCE

In the matter titled as "M.C. Mehta versus Union of India & Others, Writ Petition (Civil) No. 13029 of 1985" vide judgment dated 24.10.2018 the Hon'ble Constitution Bench of three judges of the Supreme Court of India has held that the right to live in an environment free from smoke and pollution follows from the quality of life which is an inherent part of Article 21 of the Constitution.

The right to live with human dignity becomes illusory in the absence of a healthy environment. The right to life not only means leading a life with dignity but includes within its ambit the right to lead a healthy robust life in a clean atmosphere free from pollution. Such rights are not absolute and have to coexist with sustainable development. If there is conflict between health and wealth, then health will have to be given precedence. In view of the same, the Hon'ble Court has held that no motor vehicle conforming to the emission standard Bharat Stage IV shall be sold or registered in the entire country with effect from 01.04.2020.

HON'BLE DELHI HIGH COURT BANS ONLINE SALE OF MEDICINE/DRUGS ACROSS COUNTRY

On 12.12.2018, the Hon'ble Division Bench of Chief Justice of Delhi High Court has directed the Central government and the Delhi government to restrain the online sale of medicines by e-pharmacies, as the same it is not permitted under the Drugs and Cosmetics Act, 1940 and the Pharmacy Act, 1948 in a petition filed by one Dermatologist Dr. Zaheer Ahmed.

The petition claimed that lakhs of medicines are being sold online through e-pharmacies, in spite of a direction of the Drug Controller General of India to the State Drug Controllers, "to put a strict vigil on online sale of medicines in violation of the Drugs and Cosmetics Act and Rules thereunder, to protect the interest of public health," thus violating the citizens' Right to Life guaranteed under Article 21 of the Constitution.

JAMMU AND KASHMIR IS THE FIRST STATE IN THE COUNTRY TO HAVE LAW AGAINST "SEXTORTION"

In a PIL titled as "Court on its Own Motion versus State of Jammu and Kashmir" vide judgment dated 15.10.2018, the Hon'ble Chief Justice of Jammu and Kashmir had directed the State of Jammu and Kashmir to examine the concept of "Sextortion" in the context of applicable laws and to amend the existing penal laws so that illegal acts, unwarranted demands for sexual favors and inappropriate contacts by the persons in authority are made punishable. The said issue relating to "Sextortion" was examined by the Governor and it was found that in order to prevent misuse of authority for unwanted sexual favors, it is expedient to amend the existing penal laws so as to curb this menace and prevent and check such misuse of position by persons in authority, fiduciary relationship or by a public servant.

MADRAS HIGH COURT BANS ONLINE SALE OF MEDICINE TILL CENTRAL GOVERNMENT NOTIFIED REGULATORY RULES

In the matter titled as "The Tamil Nadu Chemists and Druggists Association versus Union of India & Others", the Hon'ble Madras High Court has banned the online sale of drugs and cosmetics till the Central Government notified the proposed Drugs and Cosmetics Amendment Rules, 2018. The Hon'ble High Court has also directed the Central Government to notify the proposed Drugs and Cosmetics Amendment Rules, 2018 which deals with regulations and rules w.r.t. online sale of drugs and cosmetics, by 31st January, 2019 and not later than that.

■■■■

Activities of Heart Care Foundation of India Legal Cell in 2018

Initiated in 1986, the Heart Care Foundation of India (HCFI) is a leading National NGO working to create awareness on all aspects of health among people from all walks of life and providing solutions for India's everyday healthcare needs. It uses consumer-based entertainment modules to impart health education and increase awareness amongst people. The Perfect Health Mela is its annual flagship event, which incorporates all pathies and low cost infotainment modules under one roof. Also, HCFI has always been at the forefront of various social and environmental causes that are of interest to public health via its Legal Cell. Herein, we present a summary of activities of HCFI Legal Cell in this regard in the year 2018.

CPR CASE

A representation was filed on the issue relating to CPR and AED machines in public places like courts, Delhi Metro, Railways, before the Hon'ble Delhi High Court. After due consideration, the said representation was converted into Public Interest Litigation (PIL) by Hon'ble Chief Justice of Delhi High Court titled as "Court on its Own Motion versus Union of India" and notice was issued to Union Government, Government of NCT of Delhi, Supreme Court Registrar, etc., in the said PIL. It was listed for hearing on 14.11.2018 and after hearing the said PIL was listed for next date of hearing on 25.02.2019.

OTC CASE

A representation was filed on the issue relating to formulation of law on Over-the-Counter Drugs (OTC) before the Hon'ble High Court of Delhi. After due consideration, the said representation was converted into PIL by Hon'ble Chief Justice of Delhi High Court titled as "Court on its Own Motion versus Union of India". Notice was issued to the Union Government, in the said PIL. It was listed for hearing on 14.11.2018 and after hearing the said PIL was listed for next date of hearing on 25.02.2019.

ANTI-SEXUAL HARASSMENT COMMITTEE

HCFI is committed to provide a safe and conducive work environment to its employees and expects them to combine "Expertise with responsibility". Towards this, on the basis of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, Anti-sexual Harassment Committee is constituted to prohibit, prevent or deter the commission of acts of sexual harassment at workplace and to provide the procedure for the redressal of complaints pertaining to sexual harassment. Following are the members of the Committee: Ms Anupam Sanghi, Ms Aruna Tyagi, Ms Naina Aggarwal, Dr KK Aggarwal and Mr Vivek Kumar.

HCFI CERTIFICATION EXPERT COMMITTEE

An HCFI Certification Expert Committee was formed to verify and check applications for certification received and give its opinion whether HCFI should give its certificate or not. The members are: Engineer Anuj Sinha, Former Director, Ministry of Science and Technology, Government of India - Chairman; Dr Uday Kakroo, Advisor HCFI - Member Secretary; Dr KK Kalra, Consultant Quality Control of India - Member; Dr NV Kamat, Former Director General Health Services, Delhi Government - Member and Ms Ira Gupta, Advocate - Member.

LETTERS TO VARIOUS AUTHORITIES ON BEHALF OF POOR PATIENTS

HCFI wrote letters to various authorities including hospitals on behalf of poor patients to provide them adequate and prompt treatment/surgery.

NATIONAL ESSENTIAL DEVICES AND DISPOSABLES

Vide representation dated 08.06.2018, HCFI had requested the Central Government to formulate a law relating to national essential devices and disposables in India and also to prepare a list of national essential devices and disposable. The said request of HCFI has been duly accepted by the Central Government vide letter dated 07.08.2018.

NATIONAL LIST OF ESSENTIAL MEDICAL INVESTIGATIONS AND DIAGNOSTICS

Vide representation dated 04.09.2018, HCFI had requested the Central Government to formulate a law relating to national essential medical investigations and diagnostics and also to prepare a detailed list of

the same. The Central Government is in the process of formulating the law on national essential medical investigations and diagnostics.

TRANS FATS

HCFI humbly requested the Hon'ble Prime Minister, Hon'ble Minister of Health and Family Welfare and Hon'ble Minister of Law and Justice vide representation dated 21.06.2018 to take immediate steps and to pass necessary directions thereby banning the use of trans fats in all restaurants, cafes, hotels, grocery items in India also, in the same manner as it has been banned in America. The said request of HCFI has been duly accepted by the Central Government and vide letter dated 01.08.2018 sent by Food Safety and Standards Authority of India (FSSAI) has stated that the FSSAI is in the process of notifying the limits of trans fat in all edible vegetable oil and fats to be not more than 2% by weight in a phased manner by 2022.

AIR POLLUTION IN DELHI

Vide representation dated 28.11.2018, HCFI has requested the Delhi Government for constituting a committee for recording sudden deaths taking place in Delhi due to air pollution in Delhi.

RECOGNITION OF MCI/DMC CARDS ISSUED TO DOCTORS IN RAILWAYS

Vide representation dated 31.10.2018, HCFI has requested the Central Government and Ministry of Railway to recognize the identity cards issued to doctors by Medical Council of India/State Medical Council as valid photo identity card in railways.

CHARITABLE ACCOUNTS IN GOVERNMENT HOSPITALS IN DELHI

HCFI has requested the Hon'ble Chief Justice of Delhi High Court to direct all hospitals in Delhi to follow the suggestions/directions as given by this Hon'ble Court judgment dated 17.04.2014 in the matter titled as "Mohd. Ahmed (minor) versus Union of India & Others, Writ petition (Civil) No. 7279/2013," as per which all government hospitals have to open charitable/CSR accounts in their hospitals and the money deposited in the said accounts has to be used for the treatment/surgery of poor patients.

PERFECT HEALTH MELA

The HCFI Legal Cell had also participated in the 25th MTNL Perfect Health Mela which was held in Talkatora Stadium, New Delhi from 23rd October till 27th October, 2018. It worked to create awareness on various legal issues like patients' rights, insurance law, mediation law, arbitration law, sexual harassment, doctor-patient relationship, etc.

Many renowned lawyers of the country are its members and they were all present in the Mela. Following is the list of advocates who have reported in the Mela:

- Ms Pinky Anand, Senior Advocate
- Mr Mukul Rohatgi, Senior Advocate
- Mr Rahul Gupta, Advocate
- Mr Siddarth Luthra, Senior Advocate
- Ms Anupam Sanghi, Advocate
- Mr Nageshwar Kumar, Advocate
- Mr Nikhil Rohatgi, Advocate
- Mrs Vasundhra Rohatgi, Advocate
- Mrs Gunjan Sanghi, Advocate
- Mr Pulkit Sachdeva, Advocate
- Mrs Saloni Sachdeva, Advocate
- Mr Rajendra Singh, Advocate
- Mr Sunil Kumar, Advocate
- Mrs Dharini Rajaram
- Ms Aanchal Dhingra, Advocate
- Mr Arav Kapoor, Advocate
- Mr Vijender Jain, Advocate

Hon'ble Mr Justice Vipin Sanghi of Delhi High Court and Hon'ble Mr J. R. Midha of Delhi High Court and two judges of Delhi District Court namely Mr Sanjeev Jain, and Mr Kawaljeet Singh Arora, had also attended the Mela. HCFI Legal Cell had also organized live Facebook Webcast with Ms Ira Gupta, Mr Vijender Jain, Ms Anupam Sanghi and Mr Pulkit Sachdeva on various issues like patient rights, arbitration law, competition law in health and on criminal law, respectively.

HCFI Legal Cell had organized Moot Court on the topic "Me Lord I am not Guilty". In the said Moot Court competition, almost 8 colleges had participated. It was judged by lawyers namely Ms Ira Gupta and Mr Pulkit Sachdeva, Advocates. All the participants were either from medical colleges or from nursing colleges. It was amazing to see them perform as if they were real life lawyers and judges.

HCFI Legal Cell also ensured that no mishaps occurred in the Mela like theft, molestation, etc.

DERMACON INTERNATIONAL 2019 INDIA

Indian Mission - Global Vision

17th - 20th Jan 2019
Clarks Exotica Convention Resort & Spa, Bengaluru.



KEY HIGHLIGHTS

- The 47th Annual conference of IADVL, with an international outreach program and with a theme of "Indian mission with global vision" will bring together.
- 9000 international & national delegates.
- Around 400 national & more than 60 international faculty and experts.
- Around 150 worldwide industry participations from reputed pharmaceutical companies, lasers & dermatological technologies.
- Well-structured plenary, orations, symposia, guest lectures, debates, national quiz, award papers, free communications and posters, apart from other official programs.
- Well planned courses & workshops on dermatosurgery, aesthetic dermatology, lasers and other procedural dermatology.

CONFERENCE & CME REGISTRATION FEES

	SLAB 2 1st May to 31st Aug 2018		SLAB 3 1st Sept to 15th Dec 2018		SLAB 4 / SPOT REG 16th Dec onwards	
Delegate Category	Conference Only	CME + Conference	Conference Only	CME + Conference	Conference Only	CME + Conference
IADVL Members	₹ 10000	₹ 12700	₹ 11500	₹ 14500	₹ 15000	₹ 19000
Post Graduates IADVL members	₹ 7000	₹ 8500	₹ 8000	₹ 9500	₹ 10000	₹ 12500
Accompanying Person	₹ 7000	₹ 8500	₹ 8000	₹ 9500	₹ 10000	₹ 12500
Workshop Registrations fees						
Workshops	₹ 2000	N/A	₹ 2500	N/A	₹ 3000	N/A
Target Course	₹ 3000	N/A	₹ 3500	N/A	₹ 4000	N/A

INTERNATIONAL EVENTS

- 5 Sister Society has been confirmed (South Africa, Singapore, Iran, SriLanka & SARAD) we are expecting more.
- DERMACON International Quiz Competition.
- Review Article Writing. (Alternative to Essay Competition Announced Earlier)
- DERMACON International Scholarships to Young Dermatologists.
- Global Leadership Session.
- Scholarship Program for International Delegates.

Register early

Dr S. Sacchidanand
Organising Chairperson

Dr R. Raghunatha Reddy
Organising Secretary

Dr Savitha
Treasurer

Dr Venkataram Mysore
International Liaison Chairperson

Dr D.A. Satish
Organising Co-Chair

www.dermaconinternational2019.com

Financial Tips for Doctors

The five most important factors for obtaining financial security are thrift, compound interest, patience, discipline and investing in what you know.

The five most important factors that destroy wealth are greed, debt, fees, trusting everyone and not making your own decisions.

Financial health is a 3-step process: Earn money, save money and invest money. The goal should not just be to be rich but to have financial security. Physicians are notorious for being poor negotiators. Here are some financial tips for doctors.

EARN MONEY

- Keep a budget.
- Make a will.
- Keep a personal financial statement and update it yearly.
- A physician's most valuable asset is not a home, car or other piece of personal property but his or her capacity to work and produce income.
- Earn ethically.

SAVE MONEY

- More money is lost in the hospital doctor's lounge or other similar settings where physicians congregate and talk than anywhere else. Arrogance, ego and greed overwhelm sanity.
- Always say first before buying anything "This is too expensive. I cannot afford this." Do not buy things you do not need.
- Aim to save 25%-50% of after-tax income.
- Pay your bills in full and on time.
- The most expensive part of retirement for all of us will be medical bills. Have sufficient savings such that you can live off of 5% of your total assets per year. Do not purchase an annuity.
- Get medical insurance.
- The most expensive part of a vacation is the income lost from not working.
- Avoid gambling: The odds against winning are too great and it can be addictive and destroy one's life.
- Avoid owning a restaurant or any storefront business or investing in art or another collectible.
- Avoid tax shelters, direct foreign investments, hedge funds, opportunities where all the potential investors are physicians and limited partnerships where the general partner has not invested any money.
- Up to a limit of Rs. 1.5 lakh if one invests in provident fund, public provident fund, LIC premium, pension plans, equity-linked savings scheme (ELSS), mutual funds, infrastructure bonds, national saving certificates, senior citizens saving schemes, 5 years post office time deposit, one can claim exemptions under Income Tax.
- The minor children should be given gift from their parents from time to time, even by others on their birthdays. The amount so gifted should be invested in tax-free deposit schemes.
- The capital gain arising on sale of properties, held for more than 3 years could be treated in following three ways:
  - Pay Capital Gain Tax @ 20%
  - Invest in Govt. of India Capital Gain Bonds within 6 months of sale or purchase
  - Construct another property.

INVEST MONEY

- The money invested should grow at least equal to or higher than inflation rate (normal is between 5-6%).
- Possible investments to beat the inflation rate are fixed deposits, fixed maturity plan (FMP), balance funds, equity mutual funds, real estate investments, gold, silver and other commodities and structured products.
- Best investors are the best savers. For the long-term, doctors should plan and anticipate a minimum of 10% annual return on noncash investments.
- Asset allocation and diversification - A reasonable asset allocation would be 65% stocks, 10% cash and 25% fixed income.
- Compound interest is the most valuable investment tool. Even seemingly small amounts of money have amazing potential.

- Avoid long shots. They rarely pay. There is no reason to "risk" any amount of money. Invest in what you know and like. Knowledge equals money. Great investment ideas frequently come from daily life.
- Make your own investment decisions. You may seek the advice of others, but you must ultimately make your own investment decisions. Never invest in anything just because someone else does.
- Be conservative when estimating the value of assets.
- Purchase a home that is within your budget at the earliest possible time. If you have not saved a 20% down payment, you cannot afford a home. Take a 10-year (or at most 15-year) mortgage with no prepayment penalties, and have your home paid for by age 45. Pay cash for remodelling or additions.
- Encourage your children to pay for as much of their educational expenses as possible. Take complete advantage of all financial aid and of tax options to fund your children's education.
- The average person is almost 5 times more likely to become disabled as to die prematurely. Thus, disability insurance is the most important type of insurance for a physician.
- Purchase term rather than whole life insurance. No life insurance should be required after age 60. Have a long-term care insurance policy.
- Debt is compound interest in reverse, working to the detriment of the borrower. Debt is seductive and can ruin your life. The longer the repayment period, the greater the burden of debt. Use unanticipated financial windfalls to pay off debt; there are few better investments. Do not lease a car. Never purchase stock on margin.
- Fees are either money in your pocket or money in someone else's pocket. Even small fees can represent large amounts of money over time. Do not invest in any mutual fund that charges a "load." Core investment positions for all physician investors should include index mutual funds and no-load actively managed funds with a long-term record of superior performance. Full-service brokers rarely justify their higher fees. If you make your own investment decisions, execute your trades as cheaply as possible. Physicians are preferred customers. Use this advantage to minimize fees and obtain perks.
- Deal with bankers on your terms, not theirs. Every word in a loan document is important. Read it closely. Do not sign a "callable" loan (a loan that must be repaid upon the lender's demand). Loaning money to a family member only to "help" them is actually doing them and you a terrible disservice.
- Only trust people you know well, who have earned your trust and respect.
- Identifying investment opportunities - Real opportunities occur about once a year. Keep your eyes open.
- Money is made when an asset is purchased. It is impossible to make money when overpaying for an asset. Never buy just because the price is down. Try to buy assets for less than they are worth.
- Take profits "too early." An asset must be sold to lock in a profit. When you are congratulating yourself on your investment genius, that's the time to sell.
- There are no one-decision investments. Do not fall in love with an investment.
- Aggressively sell nonperforming assets.
- Donate at least 3-5% of your income to charity each year.
- Distribute the funds in different type of schemes.
    - Some part should be invested in schemes with fixed return like Bank FDs.
    - You must avail the PPF account to full 1.5 lakh since the Interest received is fully exempt from Income Tax. Moreover, this account can never be attached for recovery by any authority.
    - Some part should be invested in equity shares, and the shares should be held for a minimum of 1 year. The profit earned after holding shares for 1 year is fully exempt.

Make a Will

It is necessary to make a Will in advance for the security of your family. The same should be registered at the same place where properties are registered. A stamp paper (Rs. 100/-) may be required for registration. A Will should be registered in the presence of two witnesses, one of whom preferably should be a doctor as most disputes on properties later on are to prove whether the person at the time of writing the Will was of sound mind. It is better to video record the Will, for a 100% security, so that if there is a dispute, it can be proved that the deceased was a person of sound mind.

IJCP SUTRA 620: Be more physically active—adults should do at least 150 minutes a week of moderate-intensity activity, or 75 minutes a week of vigorous-intensity activity.

IANCON 2018: 26th Annual National Conference of Indian Academy of Neurology

SEPTEMBER 27-30 | PANDIT DEENDAYAL UPADHYAY AUDITORIUM, SCIENCE COLLEGE CAMPUS, RAIPUR

REHABILITATION OF READING AND WRITING DEFICITS AFTER BRAIN DAMAGE

Dr Gopee Krishnan, Manipal

In the years to come, with rising literacy and technological proliferation, the clients' ability to read/write has the potential to become a major outcome measure in clinical practice of Neurology. The neurological typing of reading/writing deficits (following brain damage) is valuable in lesion localization. The cognitive (neuropsychological) models, though weak in lesion localization (despite the rigorous neuroimaging efforts), provide valuable insights on the treatment direction in these deficits. Such model-driven approaches to rehabilitation can predict the outcomes of the intervention program, and testify the models themselves, which in turn advances our understanding of the complex cognitive processes such as reading.

BREAKING BAD NEWS

Dr Roop Gursahani, Mumbai

- Communication skills are learnable and Neurologists need these skills in various situations - Delivering the diagnosis of an 'incurable' or life-limiting neurologic illness; Serious illness communication: when an existing low level neuroinflammation (LLNI) enters an advanced phase.
- Shared decision making is important in catastrophic brain injury.
- Bad news can be delivered using simple protocols (e.g., SPIKES) for organizing these conversations.

BLOCKS, INJECTIONS AND NEUROMODULATION IN REFRACTORY MIGRAINE

Dr Alok Tyagi, UK

Onabotulinum toxin A is the standard of care for chronic migraine. Although nerve-blocks are used extensively in migraine and with good effect, there is a lack of evidence-base.

Noninvasive neuromodulation is an option in migraine management. Calcitonin gene-related peptide (CGRP), a 37-amino acid neuropeptide derived from the gene encoding calcitonin exists in 2 forms in humans, and alpha-CGRP is the predominant form. In the periphery, CGRP mediates vasodilatation and centrally it mediates the transmission of pain and is also involved in regulatory mechanisms. It acts on the second order neurons in the trigemino-cervical complex.

Erenumab is the first licensed anti-CGRP monoclonal antibody for migraine prophylaxis. It is indicated for adults who have at least 4 migraine days a month. Erenumab shows efficacy in different conditions, including episodic and chronic migraines, and difficult to treat subpopulations.

FIRST AMONG EQUALS: ART OF CHOOSING THE FIRST ADD-ON IN EPILEPSY

Dr Param S Kharbanda, Chandigarh

Factors that underline the search for add-on anti-epileptic drugs (AEDs): Suboptimal efficacy and side effect profile. Many AEDs can be used as add-ons. Currently, levetiracetam, clobazam, lamotrigine, valproic acid tick most required boxes. Different groups suitable for combination are sodium channel blockers, calcium channel blockers, GABA-ergic drugs, synaptic vesicle protein 2A modulation, and carbonic anhydrase inhibitor.

Inert AEDs make better combo choices. While switching monotherapies or adding on, current AED should be held constant and new AED should be titrated gradually. If there are significant adverse effects, baseline AED must be decreased simultaneously. Multiple 2 drug combinations must be tried before adding on a third drug.

EXTENT OF CEREBRAL VENOUS THROMBOSIS ON MRV: CORRELATION WITH CLINICAL AND MRI FINDINGS

Dr VK Singh, Dr J Kalita, Dr UK Misra, Lucknow

Cerebral venous sinus thrombosis (CVST) has been reported to be a rare cause of stroke and accounts for

0.5-1% of all strokes. The clinical severity, magnetic resonance imaging (MRI) changes and outcome may be related to the extent of occlusion of venous sinuses. Papilledema is frequently encountered among patients with superficial venous system involvement and higher CVST score on magnetic resonance venography (MRV). Higher CVST score is not related to clinical severity, rapidity of symptoms and outcome. Parenchymal involvement is associated with risk of frequent seizure, focal deficit and low GCS.

VALIDATION OF BATMAN SCORE IN POSTERIOR CIRCULATION STROKE: A STUDY FROM TERTIARY CARE HOSPITAL

Dr Suresh I, Dr Muralidhar Reddy Y, Dr Subhendu Parida, Dr Shyam K Jaiswal, Dr Santosh Kumar B, Dr Lalitha P, Dr Syed Osman, Dr Murthy JMK, Telangana

Posterior circulation stroke accounts for 20-25% of all ischemic strokes. Basilar artery occlusion is associated with high morbidity and mortality rates. A link has been seen between presence of good collaterals and a significant favorable outcome in posterior circulation strokes. Basilar Artery on Computed Tomography Angiography (BATMAN) score is a novel scoring system proposed in the year 2017. It is a semi-quantitative CT angiogram based grading system to quantify the extent of basilar artery occlusion as well as the presence of collateral circulation from posterior communicating arteries. BATMAN score may be considered a useful prognostic marker of outcome in posterior circulation strokes. Subjects with BATMAN score <7 have poor outcome at 3 months.

NIPAH VIRUS ENCEPHALITIS

Dr Jayakrishnan Chellenton, Kerala

This is a highly lethal paramyxovirus infection. Mortality rates range from 70% to 80%. Its natural reservoir is large old world fruit bat. It is transmitted by coming in contact with the bat saliva, urine and stool. Human-to-human transmission can occur by droplet infection and close contact with the bodily fluids of the infected patients (respiratory secretion, urine, vomitus, blood, stool). Incubation period is 7-21 days. Symptoms include fever, headache, bodyache, vomiting and tiredness. Encephalitis is characterized by rapid onset altered sensorium and coma. Odd neurological findings like autonomic dysfunction (tachycardia, hypertensive response), profuse sweating, early brainstem dysfunction, segmental myoclonus, generalized areflexia, loss of vestibulo-ocular reflex (VOR) and ptosis are seen. Acute respiratory distress syndrome (ARDS) and myocarditis are usual in the course of illness. Laboratory investigations may show thrombocytopenia, elevated transaminases, elevated cardiac enzymes and hypoxemia. Cerebrospinal fluid examination may show elevated protein and leukocytic pleocytosis. MRI may show small discrete FLAIR hyperintensities in the neuroparenchyma. Confirmation can be made by real-time rtRNA-PCR, from serum, urine and throat swab. Virus isolation can be done only in NIV (BSL 4 lab) Pune. There are no specific antiviral medications; some trials have been done with ribavirin. Patient isolation and strict personal protection measures need to be implemented. Proper disposal and decontamination of all the bodily fluids and the fomites of the patient is a must to prevent the spread of infection. Dead patients should be cremated with utmost care, as they can be the source of infection. The disease comes under notifiable diseases (State and Central Government and WHO). Post-exposure prophylaxis trials with anti-Hendra monoclonal antibody are present (on humanitarian basis in Australia). This monoclonal antibody is not available in India.

PROTECTING BRAINS THROUGH STROKE PREVENTION STRATEGIES IN INDIA

Dr Yogeshwar Kalkonde, Maharashtra

Stroke is the fifth leading cause of disability-adjusted life years (DALYs) lost in India. In 2015, there were 7,00,000 stroke deaths in India with 55% of these occurring prematurely between 30 and 69 years of age. About 70% of stroke deaths occur in rural areas of India where access to healthcare for stroke is limited. Ten modifiable risk factors contribute to 90% risk of stroke. Two approaches - high risk and population-level - are proposed to reduce the risk of stroke. High risk approach targets people with- a) risk factors, e.g., hypertension, sedentary lifestyle, dyslipidemia, to reduce the risk of stroke; or b) higher overall cardiovascular risk determined using risk scores. Population-level preventive approaches target the entire population, e.g., reducing salt in packaged foods, promoting active transport, use of mass/social media to increase awareness, etc. Both approaches will be needed in India.

Hypertension is the most important risk factor for stroke and hypertension control is the most proven strategy to reduce strokes. Health system strengthening to improve preventive measures will be needed in addition to improved acute stroke care to prevent strokes in India.

IJCP SUTRA 622: Reduce your intake of processed foods, especially those with added sodium and sugar; also reduce your consumption of sugar-sweetened beverages and drink more water instead.

THE HOW AND WHY OF REFRACTORY MIGRAINE

Dr K Ravishankar, Mumbai

- There is no accepted/established definition for refractory migraine yet. A consistent nomenclature is essential. There could be a possible genetic basis, structural explanation, systems functional explanation or pharmacological explanation for refractory migraine. European Headache Federation proposed criteria for refractory chronic migraine: a) ICHD-III β chronic migraine - with no medication overuse; b) Prophylactic migraine medications in adequate dosages for at least 3 months; c) Contraindications or no effect of the following preventive medication with at least 3 drugs from the following classes: β blockers; anticonvulsants; tricyclics and others.
- Risk factors for migraine progression - *Nonmodifiable*: Female gender, age, low socioeconomic status, head trauma. *Modifiable*: Attack frequency, obesity, medication overuse, caffeine overuse, stressful life events, snoring/sleep apnea.
- Missed exacerbating factors - Risk factors for migraine progression; comorbid illness (psychiatric); medication overuse (MOH); modifiable risk factors (dietary or lifestyle factors, occupational or environmental factors, hormonal influence).
- Wrong diagnosis - Migraine may be missed or misdiagnosed - no thorough history, atypical presentations, not assessing disability levels; presence of secondary headache that mimics primary and wrong investigations.
- **Nonpharmacological treatment -** *Behavioral treatments*: Relaxation training, hypnotherapy, thermal biofeedback training, electromyographic biofeedback therapy, cognitive/behavioral management therapy. *Physical treatments*: Acupuncture, transcutaneous electrical nerve stimulation, occlusal adjustment, cervical manipulation, lifestyle changes, patient education. **Risk factor modification -** Attack frequency: prevention with pharmacologic and behavioral interventions; obesity: weight loss, exercise, behavioral intervention; stress: stress management with biobehavioral techniques, exercise; snoring: diagnose and treat sleep apnea, weight loss; allodynia: manage attack frequency and treat early; depression and anxiety: assess, treat with pharmacologic and behavioral therapies, refer when appropriate; acute drug overuse: limit acute drug use <3 days/week and be selective about which acute drugs are used; caffeine: stop.

PREVENTION OF DEMENTIA

Dr Suvarna Alladi, Bengaluru

Risk factors for Alzheimer's disease (AD): Age; genetic factors; low education; low socioeconomic status; cardiovascular risk factors; sedentary life; malnutrition; head trauma; psychological stress; pollution. Age is the most important risk factor. Vascular risk factors facilitate neuroinflammation in AD. Epigenetics plays a key role in the relationship between inflammation, life course and dementia. EWAS association studies have made it clear that epigenetic changes in response to environmental conditions like stress and pollution complement genetic mutations and contribute to the development and progression of chronic inflammation in AD. Reversible causes, especially neuroinfections and vitamin B_{12} deficiency, seem to account for 18% of all dementias. Low educational levels increase the risk of dementia. Clinical, epidemiological studies have shown protective effect of education against dementia. Education enhances cognition, brain structure and connectivity. Folic acid intake, low saturated fat consumption, high fruit and vegetable consumption, and Mediterranean diet have been associated with low risk of AD. Diet and physical exercise are being recognized as epigenetic modulators of brain plasticity and cognition. People with more companionship seem to have reduced risk of dementia and stroke. Greater emotional support is associated with reduced dementia and risk. People reporting higher levels of purpose in life exhibit better cognitive function despite brain AD pathology burden of the disease. There is a huge opportunity for prevention of dementia. This means enhancing protective factors in early, mid and later life.

UNRAVELING MRI-NEGATIVE EPILEPSIES

Dr Jayanti Mani, Mumbai

- **Why is the lesion so important?** Finding the lesion on MRI is key for successful epilepsy surgery. However, 20-40% of patients have no lesion on MRI. Localization of epileptogenic zone is difficult in MRI-negative cases. There is 2.5 times lower chance of successful surgery in MRI-negative cases. Defining the limits of the epileptogenic zone is more difficult. There is greater risk of postoperative functional deficits due to poor delineation of eloquent cortex from the epileptogenic zone.
- Magnetoencephalography (MEG): MEG measures the magnetic field generated by synchronized postsynaptic currents in cortical pyramidal cell dendrites. Current dipole maps of interictal

spikes are overlaid onto an MRI scan. Spatial and temporal resolution of MEG is superior to scalp electroencephalography (EEG) but limited to dipoles on the cortical surface and less sensitive to deeper sources.

- Magnetic source imaging (MSI) and positron emission tomography (PET): The presence of a single focal abnormality, either on MEG or PET, is associated with a good surgical outcome. However, the spatial congruence between the volume of PET or MEG abnormalities, and that of the seizure onset zone (SOZ), is far from perfect in many patients. Overall, the diagnostic accuracy of these investigations often remains insufficient to guide surgical decision without prior intracranial EEG in patients with MRI-negative epilepsy. Conversely, both investigations appear useful to guide the placement of depth or subdural electrodes, and help promote an optimal sampling of the SOZ by these electrodes.
- MSI and PET combination - Knowlton et al evaluated localizing value of association of MSI and [^{18}F]-FDG-PET in 51 patients with MRI-negative epilepsy who had achieved seizure freedom after epilepsy surgery - only 25% patients had localized abnormalities on both MSI and [^{18}F]-FDG-PET; but it was highly specific: 95% specificity for MSI + PET in comparison with 79% for MSI or PET alone.
- In MRI-negative cases, one has to rely on various functional studies. None of these are individually robust to make conclusions on epileptogenic localization. So, compare, analyze and synthesize data from multiple modalities. Integrating this information in patients' cerebral anatomy will help plan a surgical strategy. This integration mandates coregistration of these functional modalities into a common physical coordinate system.

EXPLORATORY NEUROGENETICS

Dr Mohammed Faruq, New Delhi

- Next generation sequencing has revolutionized the current field of neurogenetics and neurogenomics. It is now possible to make disease gene discovery using single patient and/or a family. In our country, we require a systematic clinical and genetic approach to decipher a variety of adult onset neurogenetic diseases, such as Parkinson disease, amyotrophic lateral sclerosis (ALS), spinocerebellar ataxias and limb-girdle muscular dystrophy (LGMD). The compendium of mutations of our population also requires a deeper exploration and systematic reporting for making genetic diagnosis feasible and cost-effective. Thousands of patients with various neurogenetic ailments have to undergo multiple rounds of hospital visits to get correct diagnosis and the time taken is so much that in the lifetime of several patients, the disease goes undetected.
- At the Council of Scientific and Industrial Research (CSIR) - Institute of Genomics and Integrative Biology (IGIB), researchers have earlier demonstrated experience in hereditary ataxia genetics in collaboration with AIIMS and other major tertiary centers. Researchers could identify genetic causality in 50% of patients who were confirmed to carry pathogenic genetic defect in one of the several genes linked to ataxias. Researchers have reported clinical and genetic account of one of the rare but unique spinocerebellar ataxia (SCA) subtype in India, SCA12 (Srivastava et al. Brain. 2015). Researchers have identified cases of Fragile X-associated tremor/ataxia syndrome (FXTAS) among the group of patients who clinically behaved as SCA12 but were negative for SCA12 mutations. Currently, to make genetic diagnosis accessible, the lab is committed to offer genetic diagnosis of various neurogenetic ailments, e.g., Huntington's disease, cerebellar ataxias, ALS, Alzheimer's, neuropathies, dystonia, etc. For details please visit, http://gomed.igib.in.

HIV NEUROLOGY: INDIAN PERSPECTIVES (OUR JOURNEY OVER THREE DECADES)

Dr P Satish Chandra, Bengaluru

- The number of people living with HIV (PLHIV) in India was estimated to be 21.17 lakhs in 2015 vs. 22.26 lakhs in 2007 (NACO report, 2016).
- There were 80,000 new infections in 2016; a decline of around 66% has been noted in infections from 2000 and 32% from 2007.
- Nervous system manifestations of HIV infections - Primary HIV virus involvement: AIDS dementia, primary HIV infection, vacuolar myelopathy, chronic sensory neuropathy; Latent phase CD4 count 200-500: Myelitis, acute inflammatory demyelinating polyneuropathy (AIDP), chronic inflammatory demyelinating polyneuropathy (CIDP), muscle disorders; Advanced phase CD4 count <200: Opportunistic infections, malignancy, lymphoma, plasmacytoma, Kaposi sarcoma, progressive multifocal leukoencephalopathy (PML),

metabolic; Due to antiretroviral therapy (ART): Peripheral neuropathy, myopathy.

- Opportunistic infections of nervous system associated with HIV/AIDS - Virus: Cytomegalovirus, herpes simplex virus, varicella-zoster virus, JC virus; Bacteria: *Mycobacterium tuberculosis*, atypical mycobacteria, *Bartonella, Nocardia*; Fungi: Cryptococci, Coccidioidomycosis, Histoplasmosis, Blastomycosis, Aspergillosis, *Candida albicans*, Mucormycosis, Sporotrichosis; Parasites: CNS Toxoplasmosis, *Acanthamoeba*, *Trypanosoma*, *Strongyloides stercoralis*, Cysticercosis. There has been an upsurge in TB due to HIV infection.
- India has been declared as 'hotzone' for MDR TB. New-onset seizures are frequent manifestations among HIV seropositive patients. Common causes include mass lesions, meningitis, and HIV encephalopathy. Long-term AEDs should be given, even for single seizure among HIV seropositive patients.
- According to a 2005 study in 500 HIV seropositive patients with neurological manifestations, seizures were noted in 99 patients, and were absent in 401 patients. About one-fifth of HIV-infected drug naïve patients with neurological disorders had new-onset acute symptomatic seizures, mainly secondary to opportunistic neuroinfections. Of the 99 HIV-infected patients with new-onset acute symptomatic seizures, 20 patients (4.0%) presented with seizure as the initial manifestation.
- In a retrospective study conducted at National Institute of Mental Health and Neurosciences (NIMHANS), 335 HIV-seropositive patients with cryptococcal meningitis were analyzed. Overall, 96% of the patients had headache as their predominant clinical manifestation. Headache was associated with fever in 79% of the patients.
- Toxoplasmosis and seizures - According to study conducted at NIMHANS, 35% patients presented with seizures as the initial manifestation. In all, 22 patients had seizure as their initial manifestation of cerebral toxoplasmosis.
- Gupta et al used standardized neuropsychological tests to assess cognitive functioning in a sample of 119 adults infected with Clade C HIV-1 who were not on antiretroviral medications. Among the seropositive subjects, 60.5% had mild-to-moderate cognitive deficits. None of the subjects had severe cognitive deficits.
- The Frascati criteria is more sensitive to neurological progression in highly active antiretroviral therapy (HAART) experienced HIV-infected individuals. The progression of HIV-dementia is variable. Few patients remain cognitively stable till death. Those with CD4 counts <100 tend to progress more quickly. Neuropsychological features of HIV-dementia reflect the predominance of subcortical involvement. Incidence of peripheral neuropathy is less common with HIV-1 Clade C unlike the West (Clade B).
- Demyelination is more prominent than axonal pathology in asymptomatic cases. Cytomegalovirus remaining latent in nerve may be the forerunner for development of symptomatic peripheral neuropathy.
- Special features of Neuro AIDS in India: In spite of heavy burden of HIV/AIDS - HIV-associated neoplasia are infrequent, including primary lymphoma; HIV-associated dementia and HIV encephalitis are less common; spinal pathology including vacuolar myelopathy is rare; Kaposi sarcoma has not been reported. There seems to be a low prevalence of PML in India and Africa.

IN CONVERSATION WITH DR BHUPENDRA CHAUDHARY

Dr Bhupendra Chaudhary, Meerut, UP

What are the current therapeutic options and unmet medical need in epilepsy?

The following AEDs have been approved by the US Food and Drug Administration (FDA): Carbamazepine, clonazepam, felbamate, gabapentin, lacosamide, lamotrigine, levetiracetam, oxcarbazepine, phenobarbital, phenytoin, pregabalin, topiramate, valproate, vigabatrin and zonisamide. About 60% of people living with epilepsy have partial-onset seizures and one-third remain uncontrolled, despite trying treatment with a range of AEDs.

What is the mechanism of action of lacosamide compared to other AEDs?

Lacosamide enhances slow inactivation phase of sodium channels without affecting fast inactivation. It acts in the following ways:

- By enhancing the number of sodium channels entering the slow inactivation, it reduces the long-term availability of sodium channels for activation.
- Targets activity occurring during sustained high-frequency neuronal firing or prolonged

depolarization, as seen in epilepsy. It does not affect activity mediated by fast inactivation.

- Since slow inactivation of sodium channels is an endogenous mechanism by which neurons reduce ectopic hyperactivity, this modulation represents an effective mechanism to selectively reduce pathophysiological hyperactivity, while leaving physiological activity intact.

Lacosamide has a dual mode of action and both mechanisms are unique and not shared by any other AED.

What is the efficacy of lacosamide for the seizure or the epilepsy syndrome?

Lacosamide has shown greater reduction in seizure frequency. It has an early-onset of action. It has shown effectiveness with the broadest range of AEDs, including second- and first-generation agents. In studies it is seen that lacosamide provides more seizure free days along with long-term retention rate.

What are the benefits of lacosamide over other antiepileptics?

Sodium channel inhibition by lacosamide was compared to other anticonvulsants in neuroblastoma cells. Lacosamide exhibited far better enhancement of slow inactivation compared to other AEDs.

What is known about the tolerability of lacosamide?

A pooled tolerability data of 3 clinical studies (n = 1,308 patients) suggests that it is a well-tolerated molecule in patients with partial-onset seizures. The overall incidences of treatment-emergent adverse events occurring during the treatment phase (titration plus maintenance) were 65% in placebo recipients and 70% and 82% in recipients of the recommended dosages of lacosamide 200 and 400 mg/day. The most common treatment-emergent adverse events included dizziness, headache, nausea and diplopia. Overall, the incidence of nervous system (especially dizziness) and gastrointestinal adverse events were dose related. Lacosamide does not have tendency to prolong the QT/QTc interval or QRS duration.

What is known about the safety of lacosamide?

As observed, lacosamide has low rate of somnolence comparable to placebo. There is low rate of cognitive impairment and behavioral abnormalities similar to placebo. The incidence of rash and edema is low, similar to placebo. It has weight-neutral results. The small increase in mean PR interval is not of clinical significance.

CURRENT DIAGNOSIS AND TREATMENT OF VERTIGO AND DIZZINESS

Dr Michael Strupp, Munich, Germany

- Vertigo and dizziness are among the most frequent symptoms with an annual incidence of 11%. The keys to the diagnosis are: Systematic patient history with four key questions: time course, type, modulating factors, accompanying symptoms and combined clinical examination of the - Vestibular system with four aspects: nystagmus, head impulse test, positioning maneuvers, Romberg test with the eyes open and closed and Ocular motor system to differentiate peripheral from central vertigo with five clinical signs: skews deviation, central fixation nystagmus, gaze-evoked nystagmus, normal head-impulse test, patient not able to stand unaided.
- The most frequent forms are benign paroxysmal positional vertigo (BPPV), functional dizziness, central vertigo, in particular cerebellar dizziness, vestibular migraine, Menière's disease, acute unilateral vestibulopathy (vestibular neuritis) and bilateral vestibulopathy.
- Depending on the specific diagnosis, the treatment is based on physiotherapy, pharmacotherapy, psychotherapy and rarely surgery.
- Treatment of - *BPPV:* liberatory maneuvers; *Functional dizziness*: psychoeducational therapy and selective serotonin reuptake inhibitor; *Vestibular migraine*: prophylactic treatment with a β-blocker; *Menière's disease*: titrate the attacks with betahistine; *Acute unilateral vestibulopathy*: betahistine, steroids, physiotherapy; *Bilateral vestibulopathy*: balance training.

A DIALOGUE WITH DR SUBHASH KAUL

Dr Subhash Kaul, Hyderabad

What are conventional and newer anticoagulants?

Oral anticoagulants block the coagulation cascade either by an indirect mechanism (e.g., vitamin K antagonists [VKAs]) or by a direct one (e.g., the novel oral anticoagulants [NOACs]). VKAs are widely used as treatment of venous thromboembolism and for stroke prevention in patients with atrial fibrillation (AF). Although low-molecular-weight heparin remains the first-line in venous thromboembolism prophylaxis, more recently, the NOACs such as dabigatran, rivaroxaban and apixaban were approved for stroke prevention in patients with AF after showing at least noninferiority to warfarin in RE-LY, ROCKET-AF and ARISTOTLE

IJCP SUTRA 626: Pain medication is personal—if you are taking prescription opioids, follow your doctor's instructions, store them safely to prevent diversion or misuse, and properly dispose of any leftover medication.

trials, with dabigatran (110 or 150 mg twice-daily), rivaroxaban (20 or 15 mg once-daily) and apixaban (5 mg twice-daily), respectively. While awaiting long-term safety data, the choice among all these available therapies should be based on patient preferences, compliance and ease of administration, as well as on local factors affecting cost-effectiveness.[1]

What are the concerns and benefits associated with anticoagulant therapy?

Anticoagulants are the cornerstone of stroke prophylaxis in patients with AF, a condition that disproportionately affects individuals as they age. Since, older age is a risk factor for bleeding as well as thrombosis, weighing the risks and benefits of anticoagulants—which increase bleeding risk—is essential.[2] NOACs have emerged as alternatives to VKAs, but are "underused" in the elderly because of concerns about high frequency of renal failure, low body mass index and body composition of muscle and fatty tissue in the elderly. Comorbidities and polypharmacy, often present in the elderly, are additional factors that raise these concerns.[3] Downside to the use of NOACs is the lack of a quick reversal agent, except idarucizumab, which is approved for reversal of dabigatran's anticoagulant effects. Take-home message is that the NOACs are preferred and effective in patients without renal failure.

Can oral anticoagulants be used in patients on dialysis?

AF facilitates the development or progression of chronic kidney disease (CKD), and the prevalence and incidence of AF increases with decreasing renal function. Patients with AF and CKD have increased morbidity and mortality due to excessive risk for both thromboembolic and severe bleeding events. The efficacy and safety of NOACs in patients with end-stage renal dysfunction and on dialysis is unclear. The routine use of NOACs in patient with severe renal dysfunction (CrCl <15 mL/min) as well as in patients on dialysis is best avoided. Additionally, there is lack of evidence for VKA in this patient population. Thus, the decision to anticoagulate should be individualized based on a multidisciplinary approach considering patients' preferences.[4]

Can dabigatran be used in patients with hepatic impairment?

No change in dabigatran exposure is reported in patients with moderate hepatic insufficiency. However, the use of dabigatran is not studied in patients with severe hepatic impairment.

When switching from VKA to NOAC, what should be considered?

When switching between different anticoagulant therapies, it is important to ensure the continuation of anticoagulant therapy while minimizing the risk for bleeding. Switching from VKA to NOAC can be done immediately once the INR is ≤2.0. If the INR is 2.0-2.5, NOACs can be started immediately or (better) the next day.[4]

How can we switch between NOACs?

The alternative NOAC can be initiated when the next dose of the initial NOAC is due, except in situations where higher than therapeutic plasma concentrations are expected (e.g., in a patient with impaired renal function). In such situations, a longer interval may be foreseen.

References: [1]Gallego P, et al. Am J Respir Crit Care Med. 2013;188(4):413-21. [2]Quinn GR, et al. Cleve Clin J Med. 2016;83(5):345-8. [3]Karamichalakis N, et al. J Geriatr Cardiol. 2013;13:718-23. [4]Steffel J, et al. Eur Heart J. 2018;39(16):1330-93.

IMPROVING OUTCOMES IN CHILDHOOD EPILEPSY

Prof J Helen Cross, London

Prof Cross has been awarded the Order of the British Empire (OBE) in 2015 for services to children with epilepsy.

- Early-onset epilepsy is associated with a poor prognosis for long-term seizure remission and neurodevelopmental outcome. Epileptic activity itself contributes to cognitive and behavioral impairments beyond that expected from the underlying pathology alone (e.g., cortical malformation).
- There is a major impact from etiology, compounded by seizures. Accurate diagnosis, with appropriate interventions, is likely to have greatest impact on outcome.
- Treatment choices in infantile spasms - Vigabatrin (1996); steroids may be preferred over vigabatrin (UKISS Lux et al, 2004); vigabatrin + steroids therapy is more effective than steroids alone (ICISS O'Callaghan et al, 2017).
- Dravet syndrome accounts for 1% of the epilepsy population. Effective AEDs for Dravet syndrome include valproate, clobazam, topiramate, levetiracetam and ketogenic diet.
- Devinsky et al have shown in a 2017 study that in patients with Dravet syndrome, cannabidiol

resulted in a greater reduction in convulsive-seizure frequency than placebo and was associated with higher rates of adverse events. Ceulemans et al demonstrated success with the use of fenfluramine as an add-on treatment for Dravet syndrome in 12 patients aged 3-35 years at last evaluation. Exposure duration to fenfluramine ranged from 1 to 19 years. Seven patients who were still receiving treatment at the time of the last visit had been seizure-free for at least 1 year.

- Ketogenic diet is a high fat diet designed to mimic the metabolic effects of starvation. It is used in the treatment of epilepsy. Jung et al have suggested that ketogenic diet should be considered as an additional option even in patients with focal malformation of cortical development, and long-term seizure-free outcome can be expected for patients who become seizure-free 3 months after the diet.
- New ways of thinking with regard to treatment, related to etiology, are likely to have further impact in other epilepsies.

STATINS FOR PRIMARY PREVENTION OF CEREBROVASCULAR EVENTS

Dr L Sankaranarayanan, Chennai

Elevated lipid levels have been linked with an increase in ischemic stroke, while low lipid levels may increase the risk of hemorrhagic stroke. Lipid-lowering treatment with statins has been shown to reduce the incidence of ischemic stroke without increasing the frequency of hemorrhagic stroke. These benefits could be attributed to a combination of mechanisms. Statins decrease cholesterol levels and reduce the progression of atherosclerotic plaque formation in carotid arteries, and the incidence of emboli from cardiac, aortic and carotid sites. Statins also yield cholesterol-independent effects such as improvement in cerebral blood flow and reduction in inflammation and oxidative stress, which seem to have a role in limiting the size of an ischemic lesion. Statins have potential benefits in reducing the incidence and improving the prognosis of stroke.[1]

A meta-analysis revealed that treatment with statins in the primary prevention of major cardiovascular and cerebrovascular events led to a significant relative risk (RR) reduction in the first-time occurrence of major cardiovascular or cerebrovascular events (RR 0.75), fatal/nonfatal stroke (RR 0.69) and fatal/nonfatal myocardial infarction (RR 0.70).[2]

In another meta-analysis, for primary prevention in patients without established cardiovascular disease, statins helped reduce the cardiovascular and cerebrovascular events. Statins were associated with a significant reduction in the incidence of major adverse cardiovascular and cerebrovascular events (MACCE) and the risk of stroke and coronary revascularization were reduced 29% and 26%.[3] Statins have been shown to reduce the risk of stroke as well as transient ischemic attack (TIA). Statin use reduced the incidence of carotid bruits and cerebrovascular events as well as new-onset or worsening of angina pectoris and intermittent claudication.[4]

Each 1 mmol/L (39 mg/dL) decrease in low-density lipoprotein (LDL) cholesterol corresponds to a reduction in RR for stroke of 21.1%. Statins are recommended for primary prevention of ischemic stroke in patients estimated to have a high 10-year risk for cardiovascular events. Additionally, statins reduce the risk of stroke recurrence by 12-16% and are recommended for patients with ischemic stroke or TIA that has an atherosclerotic origin or associated with other comorbid atherosclerotic cardiovascular disease.[5]

Recently, a study revealed that statin treatment is an effective and safe therapy for cerebral small vessel disease (CSVD) in older hypertensive patients. The increase in white matter hyperintensities (WMH) volume was significantly lower in the rosuvastatin group than in the placebo group.[6]

In patients undergoing thoracic endovascular aortic repair (TEVAR), chronic statin use has been found to be associated with reduced 30-day MACCEs (myocardial infarction, stroke, arrhythmia, cardiovascular death or cerebrovascular death) in nonacute aortic syndrome patients.[7]

Therefore, statins seem to have potential effects in preventing cerebrovascular events.

References: [1]Di Napoli M. Curr Opin Investig Drugs. 2004;5(3):295-305. [2]de Vries FM, et al. Drugs. 2012;72(18):2365-73. [3]Chen YH, et al. Exp Clin Endocrinol Diabetes. 2012;120(2):116-20. [4]Pedersen TR, et al. Am J Cardiol. 1998;81(3):333-5. [5]Castilla-Guerra L, et al. Curr Pharm Des. 2016;22(30):4638-44. [6]Ji T, et al. J Am Med Dir Assoc. 2018 Jul 10. [Epub ahead of print] [7]Ham SY, et al. J Cardiovasc Surg (Torino). 2018 Apr 3. [Epub ahead of print]

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IJCP SUTRA 628: Manage stress—a good diet and daily exercise are key ingredients to maintaining and improving your mental health, but don't hesitate to ask for help from a friend or mental health professional when you need it.

News and Views

Nearly 30 Million Sick and Premature Newborns in Dire Need of Treatment Every Year

Nearly 30 million babies are born too soon, too small or become sick every year and need specialized care to survive, according to a new report "Survive and Thrive: Transforming care for every small and sick newborn" by a global coalition that includes UNICEF and WHO.

The report finds that among the newborn babies most at risk of death and disability are those with complications from prematurity, brain injury during childbirth, severe bacterial infection or jaundice, and those with congenital conditions. Additionally, the financial and psychological toll on their families can have detrimental effects on their cognitive, linguistic and emotional development.

"For every mother and baby, a healthy start from pregnancy through childbirth and the first months after birth is essential," said Dr Soumya Swaminathan, Deputy Director General for Programmes at WHO. "Universal health coverage can ensure that everyone - including newborns - has access to the health services they need, without facing financial hardship. Progress on newborn healthcare is a win-win situation - it saves lives and is critical for early child development thus impacting on families, society and future generations." (*UN, Dec. 13, 2018*)

Half of Syria's Children have Grown up Only Seeing Violence as Conflict Nears 8-year Mark: UNICEF

With an estimated 4 million children born in Syria since the conflict started nearly 8 years ago, half of the country's children have grown up only knowing war, UNICEF said recently. Reaching them wherever they are and meeting their immediate and future needs remains a priority. "Every 8-year-old in Syria has been growing up amidst danger, destruction and death," said Henrietta Fore, UNICEF Executive Director, at the end of a 5-day visit to the conflict-ravaged country. "These children need to be able to return to school, receive their vaccinations, and feel safe and protected. We need to be able to help them." (*UNICEF, Dec. 13, 2018*).

Risk of Dementia Increased Among Female Veterans with TBI, PTSD and Depression

Female military veterans who have traumatic brain injury (TBI), post-traumatic stress disorder (PTSD) or depression, long after their service, may be more likely to later develop dementia than female veterans without those conditions, according to a study published in the December 12, 2018, online issue of *Neurology*.

Comparable Clinical Outcomes Between Percutaneous Repair and Medical Treatment for Secondary MR

Among patients with severe secondary mitral regurgitation, the rate of death or unplanned hospitalization for heart failure - primary efficacy outcome - at 1 year did not differ significantly between patients who underwent percutaneous mitral-valve repair in addition to receiving medical therapy and those who received medical therapy alone. These findings were published in the *New England Journal of Medicine*, online December 13, 2018.

Severe Active IBD Reduces Sperm Motility and Testosterone Levels

According to a study reported in the *Journal of Crohn's and Colitis*, online November 30, 2018, severe active inflammatory bowel disease (IBD) reduces progressive sperm motility and testosterone levels.

The levels of testosterone normalized after obtaining remission. The active disease; however, was not found to affect sperm DNA integrity. Anti-TNF-alpha therapy does not impair sperm quality.

First Proton Therapy Facility in the Country Cleared by AERB for Cancer Treatment

The Atomic Energy Regulatory Board (AERB) has issued license on 29/11/2018 to operate the proton therapy facility at Apollo Hospitals, Chennai for treatment of cancer patients. The proton therapy facility, Proteus 235, is the first of its kind facility in India and South East Asia. There are about 78 such facilities operating all over the world. The license is issued by AERB for patient treatment with proton beam of 226 MeV from radiation safety view point.

In the country, presently AERB has licensed around 1,000 radiotherapy equipments in around 475 medical institutions. These radiation therapy equipments for patient treatment are either gamma radiation based Tele-Cobalt units or are X-ray based Linear Accelerators. The AERB "License for operation" for the proton therapy facility was issued after AERB approval

at each stage, i.e. design, layout, construction and commissioning of the facility. The appropriate cost of proton radiation facility is about 500 crores… (*Atomic Energy Regulatory Board, Dec. 13, 2018*).

RCOG Recommendations on Pain Management During Pregnancy and Breastfeeding

A new Scientific Impact Paper from the Royal College of Obstetricians and Gynaecologists (RCOG) has issued recommendations on the management of pain for women during pregnancy and breastfeeding. The findings support use of appropriate pain relief options, as advised by NHS guidance.

- It recommends that, where possible, all drugs should be avoided during the first trimester - up to 12 weeks of pregnancy - but some will need to be continued to prevent harm to a woman.
- Paracetamol was found to have an excellent safety profile and is recommended as a first-line pain medication during pregnancy and breastfeeding.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) - such as ibuprofen - should be avoided unless clinically indicated, such as for a severe migraine, within the first trimester and should not be taken after 30 weeks of gestation due to increased risk to the baby. However, NSAIDs are safe to use during breastfeeding.
- Opioids should only be taken based on the advice of a doctor or midwife, but the review notes all opioids are equally safe during pregnancy.
- Dihydrocodeine is safe to take during breastfeeding but codeine should be avoided.
- The lowest effective dose should be used when taking any pain relief medication - even those bought over the counter - for the shortest possible duration to minimize any potential risks to the mother and baby.

(*Source: RCOG News, Dec. 13, 2018*)

New AHA Report on Mental Health in the Workplace

The American Heart Association (AHA) released a comprehensive report titled "Mental Health: A Workforce Crisis" focusing on mental health in the workplace—an issue the organization wants employers in the US to tackle head-on. The report highlights the connection between mental health and a host of cardiovascular comorbidities, including established links between depression and heart disease, obesity and diabetes. It states around one in five people with heart disease also struggle with depression, and depression is three times more common in patients after they've had a heart attack. Diabetics—who make up roughly 4.6% of the US population—also see higher rates of depression. The report states 12% of diabetics are depressed, though two-thirds don't seek treatment. Obesity, as well, increases a person's likelihood of depression.

The report was commissioned by the AHA's CEO Roundtable and conducted by the association's Center for Workplace Health Research and Evaluation "to underscore the business imperative to employers for providing comprehensive, science-based support for employee mental health." The report was co-signed by AHA CEO Nancy Brown, Johnson & Johnson CEO Alex Gorsky and Bank of America CEO Brian Moynihan.

Subclinical Hypothyroidism may Worsen Heart Failure

A new study published December 14, 2018 in the journal *Circulation: Heart Failure* has suggested that subclinical hypothyroidism and low T3 syndrome may worsen heart failure. Compared with heart failure patients who had normally functioning thyroid, those with subclinical hypothyroidism or low T3 syndrome had greater probability of needing a ventricular assist device or a heart transplant. They also had a higher risk of death.

AAP Policy Statement on Impact of Perinatal Depression in Pediatric Practice

The American Academy of Pediatrics (AAP) has recommended that physicians should screen women for depression during and after pregnancy and detail the health implications for children. According to an updated policy statement "Incorporating recognition and management of perinatal depression into pediatric practice," maternal depression can affect a baby's health before and after birth, and it is one of the most common and costly obstetric complications in the United States when left undiagnosed and untreated. The policy statement and an accompanying technical report were published online Dec. 17 in the journal *Pediatrics*.

A 6-day-old Baby Survives Ebola

A baby girl who was diagnosed with Ebola when she was only 6 days old has survived, health officials in the Democratic Republic of the Congo have confirmed. Baby Benedicte's mother was infected with Ebola and died during childbirth. Benedicte showed symptoms only days later and it has taken 5 weeks of round-the-clock treatment to keep her alive. "Her father, Thomas,

IJCP SUTRA 630: Glycemic control can minimize risks for retinopathy, nephropathy and neuropathy in both type 1 and type 2 diabetes, and has been shown to decrease the risk for cardiovascular disease for type 1 diabetes.

was very emotional… she is his first baby," a health ministry spokeswoman told the BBC.

Ebola is a deadly infection that causes severe fever, vomiting, diarrhea, and internal and external bleeding. About half of those infected die, but babies are even less likely to survive.

She was born on 31 October 2018 and was cared for at the Ebola Treatment Center in Beni, the city hardest hit by the outbreak in DR Congo. She is the youngest patient for whom doctors and volunteers there have cared... (*BBC Health, Dec 14, 2018*).

Baseline HPV Status Influences the Future Risk of Cervical Intraepithelial Neoplasia

Results of a 9-year Swedish nested case-control follow-up study reported in the journal *Cancer* show that the presence of human papillomavirus (HPV)-16/18 among women with negative for intraepithelial lesions or malignancy (NILM) cytology is associated with an elevated future risk of high-grade cervical intraepithelial neoplasia (CIN). HPV types other than HPV-16/18 seem to have a greater impact on women aged 30 years or older, than younger women. Women with NILM cytology and HPV-16/18 need specific follow-up management within screening.

E-cigarettes Less Toxic to Users than Cigarettes, Says Study

A new study published December 14, 2018 in the journal *JAMA Network Open* suggests that e-cigarettes are less toxic than traditional cigarettes. Comparison of nicotine and toxicant exposure in users of electronic cigarettes and combustible cigarettes revealed that current exclusive e-cigarette users had greater concentrations of biomarkers of nicotine, tobacco-specific nitrosamines, volatile organic compounds, and metals compared with never tobacco users. But, these levels were lower than those observed in current exclusive cigarette smokers and dual users of both products.

FDA Warns the Glitter on Holiday Treats may not be Sweet to Eat

The agency has issued a warning that glitter and dusting used on baked goods may contain materials that should not be eaten. The Food and Drug Administration (FDA) says this is how you can tell whether the glitter or dusting is safe to eat:

- Carefully check the label of any decorative product you're considering for use in foods. Companies that make edible glitters and dusts are required by law to include a list of ingredients on the label.
- Common ingredients in edible glitter or dust include sugar, acacia (gum arabic), maltodextrin, cornstarch and color additives specifically approved for food use, including mica-based pearlescent pigments and Food and Drug Cosmetic (FD&C) colors such as FD&C Blue No. 1.
- Most edible glitters and dusts also state "edible" on the label. If the label simply says "nontoxic" or "for decorative purposes only" and does not include an ingredients list, you should not use the product directly on foods.
- If you choose to decorate a food item with decorations that are not edible, be sure to remove the decorations before serving and eating the food.

The agency also recommends customers talk to their bakery to make sure the decorative products they use are edible… (*Source: https://www.wtsp.com*)

Madras HC Bars e-sale of Drugs from Thursday

In what could be a big disappointment for e-pharmacies and a huge inconvenience to patients, the Madras high court barred online sale of medicines from December 20, while directing the government to expedite regulations for e-pharmacies. The court, in its final order, asked the government to notify regulations by January 31, 2019, after which stakeholders will have to obtain licences within a period of 2 months. Representatives of online pharmacies said they are planning to appeal against the order soon.

The government is yet to come out with a notification amending the Drugs and Cosmetics Act, which will regulate online pharmacies. Recently, the expert committee under the health ministry, Drugs Technical Advisory Board (DTAB), approved the draft regulations for sale of online drugs by e-pharmacies. Earlier, the Delhi High Court and Madras High Court had passed interim orders stopping the sale of online drugs.

Though the draft to amend the Drugs and Cosmetics Act was issued in August, the final guideline—after taking into account comments from stakeholders—was to follow through a notification. As on date, there are no proper rules or regulations for online trading of medicines, the judgment, a copy of which was available with TOI, said… (*ET Health, Dec. 18, 2018*)

Thailand Becomes First in Asia to Introduce Tobacco Plain Packaging

The WHO has commended stronger tobacco control measures being adopted by Thailand which has become

the first in Asia and the first low and middle-income country to adopt plain packaging for tobacco products.

"Thailand's bold steps against tobacco - the single most important cause of preventable deaths worldwide – is commendable and reflects the country's earnest efforts in promoting health and well-being of its people," said Dr Poonam Khetrapal Singh, Regional Director of WHO South-East Asia, congratulating Thailand for the tobacco legislation on plain packaging adopted last week.

The new legislative announcement on plain packaging is the latest effort of Thai government and adds to the Tobacco Control Act, 2017, which enforces 20 years as the minimum age for purchasing tobacco, bans single stick sale and bans tobacco advertisement, promotion and sponsorship.

Plain packaging of tobacco products restricts or prohibits the use of logos, colors, brand images or promotional information on packaging other than brand names and product names displayed in a standard color and font style. Plain packaging is an evidence-based policy being advocated by WHO Framework Convention on Tobacco Control (FCTC), a legal treaty that aims to protect present and future generations against the devastating health and socioeconomic impact of tobacco use.

As per Thailand's new legislation, by September 2019 all tobacco products will have plain packaging. Thailand already has graphic health warnings covering 85% packaging of tobacco products. Introduction of plain packaging is expected to further boost the country's tobacco control efforts targeting the current and new users… (SEAR/PR/1704)

Two New AIIMS to be Established in Tamil Nadu and Telangana

The Union Cabinet chaired by Prime Minister Shri Narendra Modi has approved the establishment of two new All India Institute of Medical Sciences (AIIMS) at Madurai, Tamil Nadu and Bibinagar, Telangana. The institutes will be set up under Pradhan Mantri Swasthya Suraksha Yojana (PMSSY).

Each new AIIMS will add 100 UG (MBBS) seats and 60 BSc (Nursing) seats, 15-20 Super Specialty Departments and will add around 750 hospital beds… (*Press Information Bureau, Dec. 17, 2018*)

Record 169 UK Patients a Week Get Diabetes-related Amputations

A record 169 people a week undergo an amputation procedure as a result of diabetes, a study has found. Analysis by the charity Diabetes UK found that 26,378 people had lower limb amputations linked to diabetes between 2014 and 2017, a 19.4% rise from 2010 to 2013.

The charity urged NHS England to maintain beyond 2019 its £ 44m diabetes "transformation fund", which aims to improve patients' access to specialist foot care teams to help avoid amputations.

It said at least £1 in every £140 spent by the NHS went towards foot care for people with diabetes… (*The Guardian, Dec. 17, 2018*)

AAP Offers Guidance on Caring for Psychosocial Needs of Children with Special Healthcare Needs

To equip pediatricians in caring for these children, the AAP has published a new clinical report, "Psychosocial Factors in Children and Youth with Special Health Care Needs and Their Families" online Dec. 17, 2018 in the journal *Pediatrics*. Gerri Mattson, MD, FAAP, lead author of the report said, "The AAP urges pediatricians to promote protective psychosocial factors as part of a coordinated comprehensive care for children with special needs and their families. A team-based approach with community partners such as child care and schools can help with the mitigation of risk factors and promotion of protective factors such as healthy parenting techniques, stress reduction and social services, to increase resiliency." (*AAP*)

US FDA Approves Prucalopride for Treatment of Chronic Constipation

Prucalopride, a selective 5-HT4 serotonin receptor agonist, has been approved by the US FDA for treating adults with chronic idiopathic constipation. The first-in-class oral drug is taken once-daily and acts by enhancing colonic peristalsis to increase bowel motility.

Child Given World's First Drone-delivered Vaccine in Vanuatu

Recently, 1 month old Joy Nowai became the world's first child to be given a vaccine delivered commercially by drone in a remote island in the South Pacific country of Vanuatu.

The vaccine delivery covered almost 40 km of rugged mountainous terrain from Dillon's Bay on the west side of the island to the east landing in remote Cook's Bay, where 13 children and 5 pregnant women were vaccinated by Miriam Nampil, a registered nurse. Cook's Bay, a small, scattered community that does not have a health center or electricity, is only accessible

IJCP SUTRA 632: A higher target A1c (i.e., < 8%) may be preferable for some type 2 patients with comorbidities or with an anticipated lifespan, owing to advanced age or other factors, that is too brief to benefit from the effects of intensive therapy on long-term complications.

by foot or small local boats. "Today's small flight by drone is a big leap for global health," said Henrietta H Fore, UNICEF. Executive Director. "With the world still struggling to immunize the hardest to reach children, drone technologies can be a game changer for bridging that last mile to reach every child."

Vaccines are difficult to transport as they need to be carried at specific temperatures. Warm weather locations like Vanuatu, which is made up of more than 80 remote, mountainous islands stretching across 1,300 km and with limited roads, is a particularly difficult location for vaccine delivery.

As a result, almost 20% of the country's children - or 1 in 5 - miss out on their essential childhood vaccines.

"It's extremely hard to carry ice boxes to keep the vaccines cool while walking across rivers, mountains, through the rain, across rocky ledges. I've relied on boats, which often get cancelled due to bad weather," said Miriam Nampil, the nurse who injected the world's first drone-delivered vaccine. "As the journey is often long and difficult, I can only go there once a month to vaccinate children. But now, with these drones, we can hope to reach many more children in the remotest areas of the island." (*UNICEF, Dec. 18, 2018*)

Study Links Pelvic Floor Disorders to Mode of Delivery Among First-time Mothers

A study funded by the National Institutes of Health (NIH) and published Dec. 18, 2018 in the *Journal of the American Medical Association* has shown an association between the mode of delivery and a first-time mother's risk of pelvic floor disorders.

After 9 years of the study duration, women who delivered by Cesarean were at approximately half the risk of developing stress urinary incontinence and overactive bladder vs. women who had a spontaneous vaginal birth. They also had a 70% lower risk of pelvic organ prolapse. Women who had operative vaginal delivery doubled their likelihood of developing anal incontinence and pelvic organ prolapse than women who delivered by cesarean.

Researchers Develop Global Checklist for Hospital Antimicrobial Stewardship Programs

Researchers at the Center for Disease Dynamics, Economics and Policy (CDDEP), in collaboration with researchers at the Université de Lorraine, the Qatar Foundation, and the World Innovation Summit for Health (WISH) have developed a Checklist for Hospital Antimicrobial Stewardship Programming (CHASP). The list was based on an expert panel's review of published scientific research and existing checklists including the US Centers for Disease Control and Prevention's Core Elements of Hospital Antibiotic Stewardship Programs, and was published in the journal *Clinical Microbiology and Infection*. The seven core components of CHASP address:

- Senior hospital management and leadership
- Accountability and responsibility
- Access to infection management professionals
- Education and practical training
- Continuous monitoring and surveillance of stewardship activities
- Reporting and sharing of antimicrobial resistance and antimicrobial monitoring data
- Actions aimed at responsible antimicrobial use.

The checklist was tested in 12 Leading Health Systems Network hospitals across nine countries including low-income countries. Overall, participating institutions had between 11 and 29 of the 29 checklist items present. Four checklist items were present in all participating institutions and included: a multidisciplinary structure for ASP, an identified ASP leader, access to trained infection management professionals, and monitoring of the quantity of antimicrobials prescribed. The checklist and complete results of the pilot testing are published in the journal *Clinical Microbiology and Infection.*

A Hybrid Tobramycin Nebulizer Solution Approved for Pseudomonas Infections in Cystic Fibrosis

A hybrid tobramycin nebulizer solution for chronic pulmonary infection resulting from *Pseudomonas aeruginosa* in patients aged 6 years and older with cystic fibrosis has been approved by the European Medicines Agency's (EMA's) Committee for Medicinal Products for Human Use (CHMP).

It will be available as a 170 mg nebulizer solution. The active substance is tobramycin, an aminoglycoside antibiotic which primarily affects bacterial protein synthesis resulting in rapid concentration-dependent bacterial cell death… (*EMA*)

Saudi Arabia Adopts Plain Packaging on Tobacco Products

The Saudi Food and Drug Authority has informed manufacturers and importers of tobacco products to get ready for applying plain packaging on all forms of tobacco products. This step was done in close collaboration with

the WHO Regional Office for the Eastern Mediterranean, and in line with WHO's Framework Convention on Tobacco Control and its guidelines, which Saudi Arabia is party to. Saudi Arabia is one of the first few countries around the world to implement plain packaging and, is the only country in this region to do so.

The Saudi Food and Drug Authority has given manufacturers and importers of tobacco products a grace period until May 1, 2019. Failure to comply on this date will subject them to legal action. In preparation for this, the Saudi Food and Drug Authority has issued a "model plain package" to all manufacturers and importers of these products to guide the preparation of plain packaging for cigarette and waterpipe products, as well as all other products, smoked and smokeless. This "model" provides specifics on the standard color and font style to be used, and also includes sample health warnings to be incorporated onto the packs.

Plain packaging on tobacco products

A "plain" tobacco package is one that displays brand names and product names in a standard color and font style, without using logos, colors, brand images or promotional information (inside and/or outside the packaging). This is a ground-breaking step for tobacco control because plain packaging is one of the most effective public health interventions for reducing the demand for tobacco. It also:

- Influences the intention of smokers to quit
- Reduces the attractiveness of tobacco products
- Restricts use of tobacco packaging as a form of tobacco advertising and promotion
- Limits misleading packaging and labelling
- Increases the effectiveness of health warnings.

(*WHO, December 2018*)

The Lower House of the Indian Parliament Passes Bill, Which Bans Commercial Surrogacy

A Bill that bars commercial surrogacy and allows only close relatives to act as surrogates to needy infertile couples for "altruistic" reasons was passed by the Lok Sabha recently with Health Minister JP Nadda terming the proposed legislation historic. The "Surrogacy (Regulation) Bill, 2016" was passed after an hour-long debate amid noisy protests by Congress and AIADMK members over various issues. Nadda said different sections of society, political parties, the Supreme Court and the Law Commission have spoken against commercial surrogacy and that the bill addresses these concerns… (*ET Health, Dec. 19, 2018*)

In Just 6 Months, Exercise may Help those with Thinking Problems

Getting the heart pumping with aerobic exercise, like walking or cycling for 35 minutes three times a week, may improve thinking skills in older adults with cognitive impairments, according to a study published in the December 19, 2018 online issue of *Neurology*. After 6 months of exercise, study participants' scores on thinking tests improved by the equivalent of reversing nearly nine years of aging.

Giving Birth Associated with Increased Risk of Heart Disease and Stroke

A study published December 20, 2018 in the *European Journal of Preventive Cardiology* says that women who had given birth had a 14% higher chance of developing heart disease or stroke than those who had never given birth. Each birth was associated with a 4% higher likelihood of developing cardiovascular disease, regardless of body mass index, diabetes, hypertension, smoking and income level.

HIV-2 is not as Benign as Thought to be

Human immunodeficiency virus (HIV)-2 is more pathogenic than previously believed, and both HIV-1-infected and HIV-2-infected individuals have a high probability of developing and dying from acquired immune deficiency syndrome (AIDS) without antiretroviral treatment, suggests a study published online November 1, 2018 in *The Lancet HIV*. The median time from HIV infection to development of AIDS was 6.2 years for HIV-1 infection and 14.3 years for HIV-2 infection ($p < 0.0001$). The median survival time after HIV infection was 8.2 years for HIV-1 infection and 15.6 years for HIV-2 infection ($p < 0.0001$).

Deadly Marburg Virus Found in Sierra Leone Bats

Scientists have discovered live Marburg virus in fruit bats in Sierra Leone - the first time the deadly virus has been found in West Africa.

Five Egyptian rousette fruit bats tested positive for active Marburg virus infection. Scientists caught the bats separately at locations in three health districts: Moyamba, Koinadugu and Kono. There have been no reported cases of people sick with Marburg in Sierra Leone, but the virus's presence in bats means people nearby could be at risk for contracting Marburg virus. Marburg virus is a cousin to Ebola virus that causes a similar, often fatal disease in people. Testing of samples from four of the five Marburg-positive bats found

IJCP SUTRA 634: The risk of hypoglycemia is substantially increased in the elderly. Thus, avoidance of hypoglycemia is an important consideration in establishing goals and choosing therapeutic agents in elderly adults.

multiple genetically diverse strains. This suggests that Marburg virus has been present in these Sierra Leone bat colonies for many years.

Egyptian fruit bats live in caves or underground mines throughout much of Africa. Marburg virus has been detected in Egyptian rousette bats caught in sub-Saharan Africa, primarily in Uganda and the Democratic Republic of Congo, but also Gabon, Kenya and South Africa.

Scientists have shown that the Egyptian rousette bat (*Rousettus aegyptiacus*) is the natural reservoir for Marburg virus, which means the bats can carry the virus for a long time without getting sick themselves. They can then pass it on to humans or other animals through their saliva, urine, or feces … (*CDC, Dec. 21, 2018*)

WHO Launches Technical Guidance Series on the Health of Refugees and Migrants

WHO marked the International Migrants Day on December 18, 2018 with the launch of a technical guidance series on the health of refugees and migrants. Produced in collaboration with the European Commission, each publication addresses a specific aspect of the health of refugees and migrants by providing tools, case studies and evidence to inform practices and policies to improve their health.

Five publications are currently available, each with a special focus on one of the following:

- children's health;
- health promotion;
- healthy ageing;
- maternal and newborn health; and
- mental health.

This technical guidance series complements the forthcoming "Report on the health of refugees and migrants in the WHO European Region", which will be published online in the first quarter of 2019… (*WHO*)

Government Plans Survey to Check Health of its Nutrition Mission

After launching 'Poshan Abhiyan' from Rajasthan's Jhunjhunu in March, the Union government now plans to conduct a survey to check the efficacy of the nutrition scheme that aims to reduce malnutrition among children and mothers. People aware of the matter told ET that the Ministry of Women and Child Development will be in charge of conducting the survey, which will be conducted in three phases till March 2020. The ministry will hire an agency for the task. The proposed survey's first report—covering a sample of 100,000 'anganwadis'—is expected to come in by March 2019. There are nearly 1.4 m 'anganwadis' across the country and all will be surveyed in a phased manner, the persons cited earlier said… (*ET Health, December 21, 2018*)

FDA Cautions About Increased Risk of Ruptures or Tears in the Aorta

In a safety alert issued December 20, 2018, the FDA has cautioned that fluoroquinolone antibiotics can increase the occurrence of rare but serious events of ruptures or tears in the main artery of the body, called the aorta. These tears, called aortic dissections or ruptures of an aortic aneurysm, can lead to dangerous bleeding or even death. They can occur with fluoroquinolones for systemic use given by mouth or through an injection.

FDA recommends that healthcare professionals should:

- Avoid prescribing fluoroquinolone antibiotics to patients who have an aortic aneurysm or are at risk for an aortic aneurysm, such as patients with peripheral atherosclerotic vascular diseases, hypertension, certain genetic conditions such as Marfan syndrome and Ehlers-Danlos syndrome, and elderly patients.
- Prescribe fluoroquinolones to these patients only when no other treatment options are available.
- Advise all patients to seek immediate medical treatment for any symptoms associated with aortic aneurysm.
- Stop fluoroquinolone treatment immediately if a patient reports side effects suggestive of aortic aneurysm or dissection.

(*Source: FDA*)

Zoledronate Prevents Fractures in Older Women with Osteopenia

The risk of nonvertebral or vertebral fragility fractures was significantly lower in women with osteopenia who received zoledronate than in women who received placebo, according to a study reported December 20, 2018 in the *New England Journal of Medicine*. As compared with the placebo group, older women who received zoledronate had a lower risk of nonvertebral fragility fractures (hazard ratio [HR], 0.66; $p = 0.001$), symptomatic fractures (HR, 0.73; $p = 0.003$), vertebral fractures (odds ratio, 0.45; $p = 0.002$), and height loss ($p < 0.001$).

WHO Confirms Case of Yellow Fever in Netherlands, Says Risk Low

A case of yellow fever, an acute and contagious mosquito-borne viral disease, has been reported in a man in the Netherlands who recently traveled to Gambia and Senegal, the WHO said recently. The risk of further spread of the disease in the Netherlands is very low, the WHO said, in part because the virus is carried by types of mosquito rarely seen in northern Europe.

There have been no other reports of confirmed yellow fever cases from Senegal, Gambia or the Netherlands at this time, it added, but international health authorities have alerted officials in the two West African countries, since transmission and further cases there are more likely.

The WHO advises travelers to countries where the disease is common to get vaccinated at least 10 days beforehand. The man in the Dutch case was not vaccinated. After returning to the Netherlands on November 17, he felt ill and was hospitalized on November 19 with symptoms of acute liver failure. "This case ... illustrates the importance of maintaining awareness of the need for yellow fever vaccination, especially in areas with favorable environments for yellow fever transmission, such as Gambia and Senegal," the WHO said … (*Medscape*)

WHO 5 Tips for a Healthy Diet this New Year

Eat a variety of food

- In your daily diet, aim to eat a mix of staple foods such as wheat, maize, rice and potatoes with legumes like lentils and beans, plenty of fresh fruit and vegetables, and foods from animal sources (e.g. meat, fish, eggs and milk).
- Choose wholegrain foods like unprocessed maize, millet, oats, wheat and brown rice when you can; they are rich in valuable fibre and can help you feel full for longer.
- Choose lean meats where possible or trim it of visible fat.
- Try steaming or boiling instead of frying foods when cooking.
- For snacks, choose raw vegetables, unsalted nuts and fresh fruit, rather than foods that are high in sugars, fats or salt.

Cut back on salt

- When cooking and preparing foods, use salt sparingly and reduce use of salty sauces and condiments (like soy sauce, stock or fish sauce).
- Avoid snacks that are high in salt, and try and choose fresh healthy snacks over processed foods.
- When using canned or dried vegetables, nuts and fruit, choose varieties without added salt and sugars.
- Remove salt and salty condiments from the table and try and avoid adding them out of habit; our tastebuds can quickly adjust and once they do, you are likely to enjoy food with less salt, but more flavor!
- Check the labels on food and go for products with lower sodium content.

Reduce use of certain fats and oil

- Replace butter, lard and ghee with healthier oils such as soybean, canola (rapeseed), corn, safflower and sunflower.
- Choose white meat like poultry and fish which are generally lower in fats than red meat, and limit the consumption of processed meats.
- Check labels and always avoid all processed, fast and fried foods that contain industrially-produced trans fat. It is often found in margarine and ghee, as well as pre-packaged snacks, fast, baked and fried foods.

Limit sugar intake

- Limit intake of sweets and sugary drinks such as fizzy drinks, fruit juices and juice drinks, liquid and powder concentrates, flavored water, energy and sports drinks, ready-to-drink tea and coffee and flavored milk drinks.
- Choose healthy fresh snacks rather than processed foods.

Avoid giving sugary foods to children. Salt and sugars should not be added to complementary foods give to children under 2 years of age, and should be limited beyond that age.

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IJCP SUTRA 636: All women are urged to exercise a minimum of 30 minutes per day, but women who need to lose weight or maintain weight loss are now advised to engage in 60-90 minutes of moderate-intensity activity on most, or preferably all, days of the week.

Importance of Silence

KK AGGARWAL

True silence is the silence between thoughts and represents the true self, consciousness or the soul. It is a web of energized information ready to take all provided there is a right intent. Meditation is the process of achieving silence.

Observing silence is another way of deriving benefits of meditation. Many yogis in the past have recommended and observed silence now and then. Mahatma Gandhi used to spend one day of each week in silence. He believed that abstaining from speaking brought him inner peace and happiness. On all such days he communicated with others only by writing on paper.

Hindu principles also talk about a correlation between mauna (silence) and shanti (harmony). Mauna Ekadashi is a ritual followed traditionally in our country. On this day, the person is not supposed to speak at all and observes complete silence all through the day and night. It gives immense peace to the mind and strength to the body. In Jainism, this ritual has a lot of importance. Nimith was a great saint in Jainism who long ago asked all Jains to observe this vrata. Some people recommend that on every ekadashi, one should observe silence for few hours, if not the whole day.

In his book, The Seven Spiritual Laws of Success, Deepak Chopra talks in great detail about the importance of observing silence in day-to-day life. He recommends that everyone should observe silence for 20 minutes every day. Silence helps to redirect our imagination towards self. Even Swami Sivananda in his teachings recommends observation of mauna daily for 2 hours. For ekadashi, take milk and fruits, study one chapter of Bhagawad Gita, do regular charity and donate one-tenth of your income in the welfare of the society.

Ekadashi is the 11th day of Hindu lunar fortnight. It is the day of celebration, occurring twice a month, meant for meditation and increasing soul consciousness. Vinoba Bhave was a great sage of our country known for his Bhoodaan movement. He was a great advocator and practical preacher of mauna vrata.

Mauna means silence and vrata means vow; hence, mauna vrata means a vow of silence. Mauna was practiced by saints to end enmity and recoup their enmity. Prolonged silence as the form of silence is observed by the rishi munis involved for prolonged periods of silence. Silence is a source of all that exists. Silence is where consciousness dwells. There is no religious tradition which does not talk about silence. It breaks the outward communication and forces a dialogue towards inner communication. This is one reason why all prayers, meditation and worship or any other practice where we attune our mind to the spiritual consciousness within are done in silence. After the death of a person it is a practice to observe silence for 2 minutes. The immediate benefit is that it saves a tremendous amount of energy.

Silence is cessation of both sensory and mental activity. It is like having a still mind and listening to the inner mind. Behind this screen of our internal dialogue is the silence of spirit. Meditation is the combination of observing silence and the art of observation.

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Group Editor-in-Chief, IJCP Group

INSPIRATIONAL STORY

Be a Good Friend

One day, when I was a freshman in high school, I saw a kid from my class was walking home from school. His name was Kyle. It looked like he was carrying all of his books. I thought to myself, "Why would anyone bring home all his books on a Friday? He must really be a nerd."

I had quite a weekend planned (parties and a football game with my friends tomorrow afternoon), so I shrugged my shoulders and went on. As I was walking, I saw a bunch of kids running toward him. They ran at him, knocking all his books out of his arms and tripping him so he landed in the dirt. His glasses went flying, and I saw them land in the grass about 10 feet from him. He looked up and I saw this terrible sadness in his eyes.

My heart went out to him. So, I jogged over to him as he crawled around looking for his glasses, and I saw a tear in his eye. As I handed him his glasses, I said, "Those guys are jerks. They really should get lives." He looked at me and said, "Hey thanks!" There was a big smile on his face. It was one of those smiles that showed real gratitude.

I helped him to pick up his books, and asked him where he lived. As it turned out, he lived near me, so I asked him why I had never seen him before. He said he had gone to private school until now. I had never hung out with a private school kid before. We talked all the way home, and I carried some of his books. He turned out to be a pretty cool kid.

I asked him if he wanted to play a little football with my friends, he said yes. We hung out all weekend and the more I got to know Kyle, the more I liked him, and my friends thought the same of him. Monday morning came and there was Kyle with the huge stack of books again. I stopped him and said, "Boy, you are gonna really build some serious muscles with this pile of books everyday!"

He just laughed and handed me half the books. Over the next four years, Kyle and I became best friends. When we were seniors we began to think about college. Kyle decided on Georgetown and I was going to Duke. I knew that we would always be friends, that the miles would never be a problem. He was going to be a doctor and I was going for business on a football scholarship.

Kyle was valedictorian of our class. I teased him all the time about being a nerd. He had to prepare a speech for graduation. I was so glad it wasn't me having to get up there and speak. Graduation day, I saw Kyle. He looked great. He was one of those guys who really found himself during high school.

He filled out and actually looked good in glasses. He had more dates than I had and all the girls loved him. Boy, sometimes I was jealous! Today was one of those days. I could see that he was nervous about his speech. So, I smacked him on the back and said, "Hey, big guy, you'll be great!" He looked at me with one of those looks (the really grateful one) and smiled. "Thanks!" he said. As he started his speech, he cleared his throat, and began:

"Graduation is a time to thank those who helped you make it through those tough years. Your parents, your teachers, your siblings, may be a coach…but mostly your friends… I am here to tell all of you that being a friend to someone is the best gift you can give them. I am going to tell you a story."

I just looked at my friend with disbelief as he told the story of the first day we met. He had planned to kill himself over the weekend. He talked of how he had cleaned out his locker so his mom wouldn't have to do it later and was carrying his stuff home.

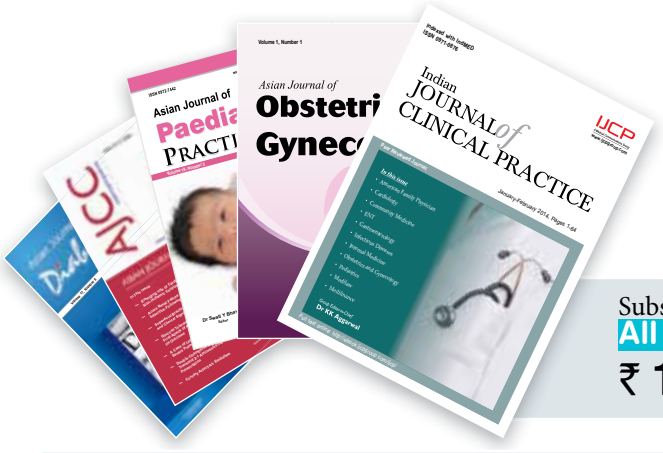
He looked hard at me and gave me a little smile. "Thankfully, I was saved. My friend saved me from doing the unspeakable." I heard the gasp go through the crowd as this handsome, popular boy told us all about his weakest moment.

I saw his mom and dad looking at me and smiling that same grateful smile. Not until that moment did I realize its depth.

Never underestimate the power of your actions. With one small gesture you can change a person's life…for better or for worse. God puts us all in each other's lives to impact one another in some way.

■■■■

IJCP SUTRA 638: Saturated fat should be reduced to less than 7% of calories.



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Lighter Side of Medicine

HUMOR

NOBEL PRIZE

A man is driving down a country road, when he spots a farmer standing in the middle of a huge field of grass. He pulls the car over to the side of the road and notices that the farmer is just standing there, doing nothing, looking at nothing.

The man gets out of the car, walks all the way out to the farmer and asks him, "Ah excuse me mister, but what are you doing?"

The farmer replies, "I'm trying to win a Nobel Prize."

"How?" asks the man, puzzled.

"Well I heard they give the Nobel Prize to people who are outstanding in their field."

YOU'RE GOING TO LOVE THE DAD'S REPLY

A teenage boy had just passed his driving test and inquired of his father as to when they could discuss his use of the car.

His father said he'd make a deal with his son: "You bring your grades up from a C to a B average, study your Bible a little, and get your hair cut. Then we'll talk about the car."

The boy thought about that for a moment, decided he'd settle for the offer, and they agreed on it.

After about 6 weeks his father said, "Son, you've brought your grades up and I've observed that you have been studying your Bible, but I'm disappointed you haven't had your hair cut".

The boy said, "You know, Dad, I've been thinking about that, and I've noticed in my studies of the Bible that Samson had long hair, John the Baptist had long hair, Moses had long hair...and there's even strong evidence that Jesus had long hair."

You're going to love the Dad's reply.

"Did you also notice they all walked everywhere they went?"

BASEBALL

There were these two friends, Bill and Bob, and they both loved baseball. So, they made a promise to each other, the first one to die, will come back and let the other know if there's baseball in heaven. Well, the day comes and Bob passes. Weeks turn to months while Bill is still waiting to hear from his friend.

Then one day, Bill is walking down the street, and Bob appears. Bill all excited says: "I've been waiting forever! So tell me, is there or isn't there Baseball in heaven?" Bob kinda perks up and says: "I've got good news and bad news." "1st, there is Baseball in heaven! The bad news is you're pitching Friday!"

THE CHEMICAL FORMULA FOR WATER

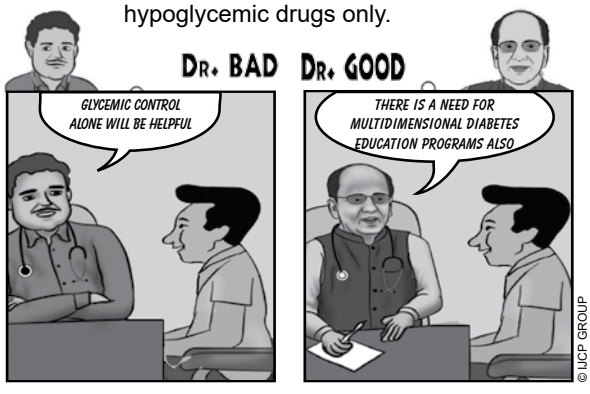
Little Johnny's teacher asks, "What is the chemical formula for water?" Little Johnny replies, "HIJKLMNO"!!

The teacher, puzzled, asks, "What on earth are you talking about"?

Little Johnny replies, "Yesterday you said it was H to O!"

Dr. Good and Dr. Bad

SITUATION: A man with type 2 diabetes who also had bipolar disorder was prescribed oral hypoglycemic drugs only.

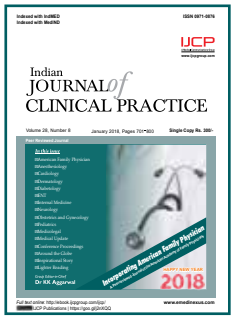


LESSON: People with mental illnesses usually have poor diabetes self-care behaviors. This could be attributed to various challenges experienced by them such as psychological, emotional stress, lifestyles, food habits, perceptions of affordability, health literacy, value of health information, physical states of health and social environments. Thus, there is a need for multidimensional diabetes education programs that consider these challenges to meet the requirements of patients with mental illnesses.

Can J Diabetes. 2018;42(4):372-81.

 IJCP SUTRA 639: Women at very high risk for heart disease should try to lower their LDL 'bad' cholesterol to less than 70 mg/dL.

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IJCP SUTRA 641: Hormone replacement therapy, selective estrogen receptor modulators or antioxidant supplements such as vitamins C and E should be used to prevent heart disease.

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Books

Stansfield AG. Lymph Node Biopsy Interpretation Churchill Livingstone, New York 1985.

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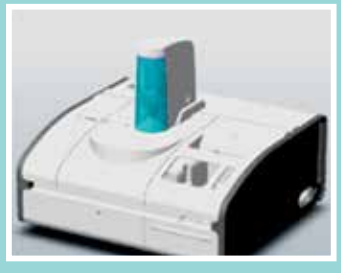
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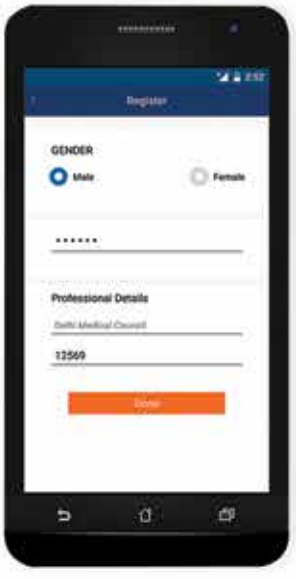
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