



Dr KK Aggarwal
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HCFI DR KK AGGARWAL RESEARCH FUND

HCFI Round Table Expert Zoom Meeting on “Rabies – A Public Health Concern”

25th September, 2021 (11 am-12 pm)

KEY POINTS OF HCFI EXPERT ROUND TABLE

- Rabies, a vaccine preventable viral disease, is a major public health problem.
- Except Antarctica, rabies is present on all continents; 95% of deaths occur in Asia and Africa.
- It is one of the neglected tropical diseases that affect the poor population in rural areas.
- The global cost of rabies is around US\$ 8.6 billion per year.
- The World Health Organization (WHO) is leading the “United against Rabies” drive towards zero human deaths from dog-mediated rabies by 2030. India is a partner to this.
- The theme of World Rabies Day (28th September) this year is “Rabies Facts not Fear”.
- Dogs account for 99% of rabies transmission. Most stray dogs in India are not vaccinated or sterilized. India has 35 to 40 million dogs.
- Rabies is endemic in India; 36% of the global rabies deaths occur in India.
- Rabies causes 18,000 to 20,000 deaths every year in India; 30 to 60% of cases are in children younger than 15 years.
- Lack of awareness claims more than 55,000 lives every year in Asia and Africa.
- Rabies is not a notifiable disease in India.
- Virus transmission occurs via saliva of the infected animal. Once symptoms occur, it is fatal.
- Deaths can be 100% prevented by prompt medical care. Vaccinating dogs can prevent deaths.
- Immediate and thorough washing of wounds with soap and water/detergent/povidone-iodine for 15 minutes can help save lives.
- The incubation period of rabies is 2 to 3 months, but can vary from 1 week to 1 year depending on the viral load and the location of the virus entry.
- Initial symptoms are fever with pain and unusual tingling, pricking at the wound site. As it spreads to the brain, fatal inflammation of the brain and spinal cord develops.
- There are two forms of rabies: Furious and paralytic.

- Furious rabies results in hyperactivity, hydrophobia, sometimes aerophobia. Death occurs after few days due to cardiorespiratory arrest.
- Paralytic rabies constitutes 20% of cases and is less dramatic than furious rabies. Muscles become paralyzed, starting from the site of the bite/scratch leading to coma and ultimately death.
- India has a rabies control program, which was started in 2013.
- Goa is the first rabies-free state in India. In 2020, Goa vaccinated 82,012 dogs against rabies across the state, educated 2,13,735 children in 1,461 schools on dog behavior and dog bite first aid, reached 10,265 teachers with key messages in rabies prevention, empowered 17,379 people through 333 community workshops and responded to 4,101 calls via rabies emergency hotline.
- Diagnosis is postmortem or clinical.
- Prevention is by mass vaccination and sterilization of dogs, education on dog behavior and bite prevention, vaccine for post-exposure prophylaxis (PEP) or pre-exposure prophylaxis (PrEP).
- PrEP is indicated for people in high-risk occupations (such as lab workers, handling liver rabies virus), outdoor travelers and expatriates living in remote areas with high exposure risk.
- Bites are divided into three categories.
 - Touching: Animal licks the skin – only washing of the area
 - Nibbling of skin: Minor scratching – wound washing and vaccination
 - Single or multiple bites: Contamination of mucous membrane with saliva from animal licks – wound washing, immediate vaccination and administration of rabies immunoglobulin (RIG).
- Category 2 and 3 carry a risk of developing rabies and require PEP.
- The risk is further enhanced if the biting animal is a known vector species, exposure occurs in a geographical area where rabies is still present, animal looks sick, wound is contaminated with the saliva of the biting animal, unprovoked bite and unvaccinated animal.
- WHO is now recommending intradermal (ID) route for PEP.
- Bites by bats or rodents do not necessitate rabies vaccination. But in cases of big rats or wild rats, PEP has to be given.
- Principles of treatment are wound management, passive immunization (RIG), active immunization (antirabies vaccine [ARV]).
- If RIG is not available on the first visit, its use can be delayed by 7 days from the date of the first vaccine dose.
- Pregnancy and infancy are not contraindications for PEP.
- If patient comes months after being bitten, he should be considered as a fresh case.
- PEP is not required in situations such as consumption of milk of rabid animal. Cooking of meat kills rabies virus.
- Immunization schedule is one dose each of ARV IM on Day 0, 3, 7, 14 and 28 days. Infiltrate antirabies Ig locally on Day 0.
- ID route (updated Thai Red Cross Regimen): 2-site schedule is 2-2-2-0-2; no dose on 14th day. Two injections (0.1 mL each dose) per visit × 4 visits in total - Days 0, 3, 7 and 28.
- Animal bite victims on chloroquine should be given ARV by IM route.
- IM regimen if bite is by cat or dog and if animal is healthy till 10 days after bite. PEP can be discontinued after 10 days by skipping dose on Day 6 to 14, but giving on Day 28.
- With ID regimen, complete course of the vaccination should be given regardless of the animal's status.
- All patients should be kept under observation for at least 15 to 20 minutes after ARV or equine rabies immunoglobulin (ERIG).
- In immunocompromised patients, management is thorough washing of wound, local infiltration of RIG in both category 1 and 2 exposures, complete course of ARV by IM route.
- Rabies monoclonal antibodies PEP is under research; phase I and II trials by WHO.
- For people at risk of exposure: PrEP with 3 doses of the vaccine at 0, 7 and 28 days. A booster dose can be given for people at continued risk. If levels fall below 0.5 IU/mL, booster should be given.
- In cases of re-exposure: proper wound toileting to be done; doses only on Day 0 and 3, either IM or ID injection at one site; no RIG needed. If previous vaccination was partial, then the complete course of the vaccine should be given.

- There is lack of awareness regarding rabies and its treatment. Additionally, the infrastructure and supplies are inadequate. There are vaccines and immunoglobulins for rabies but many times, they are not readily available.
- Stray dogs attack the domestic dog and also the owners.
- There is also the issue of animal activists.
- Engagement of multiple sectors and community education, awareness programs and vaccination campaigns are critical.

Participants: Dr AK Agarwal, Dr Mahesh Verma, Dr Arun Jamkar, Dr Ashok Gupta, Dr Anita Chakravarti, Dr DR Rai, Dr KK Kalra, Mrs Upasana Arora, Ms Ira Gupta, Mr Saurabh Aggarwal, Dr S Sharma

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People Consuming More Dairy Fat have Lower Risk of Cardiovascular Disease: Study

According to a study published in *PLOS Medicine*, people who consume more dairy fat appear to have a lower risk of cardiovascular disease (CVD), compared to those with lower intake of dairy fat.

Researchers evaluated the dairy fat consumption of 4,150 individuals aged 60 years in Sweden, one of the world's highest dairy producers and consumers. They measured the blood levels of a particular fatty acid found in dairy foods. The study cohort was followed for an average of 16 years. After adjustment for other known CVD risk factors, such as age, income, dietary habits, lifestyle and other diseases, people with high levels of the fatty acid, suggesting a high intake of dairy fats, were found to have the lowest risk of CVD, besides no increased risk of death from all causes. The researchers confirmed these results in other populations after combining the findings from Sweden with 17 other studies including nearly 43,000 individuals from the US, Denmark and the UK... (Source: CNN)

Adverse Childhood Experiences Tied to Adult Neurologic Disorders

Adult patients with headaches, epilepsy or other neurologic disorders appear to have increased odds of having had adverse childhood experiences (ACEs) compared to the general public, suggests a new study published online in *Neurology Clinical Practice*.

People with neurologic conditions having a high level of ACEs, including abuse or neglect, also seem to use more healthcare resources, have more comorbidities, and have an increased likelihood of suffering from anxiety and depression, in comparison to those with less ACEs. The study included 198 adults assessed at an outpatient neurology practice at the Hospital of the University of Pennsylvania from July 2019 through March 2020. A survey with the 10-item ACE questionnaire was completed by the participants. Following adjustment for age, gender and race, it was noted that having a high ACE score had a significant association with increased odds of experiencing three or more hospitalizations (odds ratio [OR], 5.2) or any hospitalization (OR, 2.8), compared to having less than four ACEs... (Source: Medscape)

US Authorizes Pfizer COVID-19 Booster for Those Above 65, at High-risk

The United States has authorized the use of Pfizer COVID-19 vaccine boosters among individuals over 65 years of age and adults who have a high risk of severe disease and people in high-exposure occupations.

A significant proportion of the population will now be eligible for a third vaccine dose 6 months after receiving the second jab. The authorization has come after an independent expert panel voted recommending the move last week. The panel had dismissed an initial plan to approve Pfizer boosters for all individuals aged 16 and above, stating that the benefit-risk profile was different for younger people, particularly the young males who are more prone to myocarditis.

The CDC may also recommend further specifications about the recipients of the Pfizer booster jabs. The agency may also have to define the workplaces and other settings which may result in frequent exposure to the SARS-CoV-2 virus... (Source: NDTV – AFP)