News and Views

Advise Both Exercise and Calcium and Vitamin D Supplements to Postmenopausal Women with Osteopenia

Postmenopausal women with low bone mass should be advised adequate calcium and vitamin D as well as bone-loading exercises, according to preliminary findings from the Heartland Osteoporosis Prevention Study (HOPS) published in the journal *Osteoporosis International*. These findings were also presented at the American Society of Bone and Mineral Research (ASBMR) 2021 Annual Meeting.

The study included 276 postmenopausal women and had osteopenia. Women who had osteoporosis; had an increased risk of a major fracture or hip fracture; had been on bisphosphonates within the last 6 months; were currently on estrogen, tamoxifen or aromatase inhibitors; had a serum vitamin D level <10 mg/mL or >100 mg/mL were excluded from the study.

In the study, women who had entered menopause within the previous 6 months and had osteopenia (low bone mass, T score –1.0 to –2.49) were randomized to two treatment groups for 12 months. One group received bone-loading and resistance exercise + calcium (1200 mg/day) and vitamin D (1000-3000 IU/day) supplements, while the second group was given risedronate (150 mg) along with calcium and vitamin D supplements. The control group was treated with only calcium and vitamin D supplements. The participants in the exercise group were required to visit the fitness centers three times in a week for the bone-loading exercises (jogging using a weighted vest and resistance exercises) under supervision.

The study outcome measures were bone mineral density (BMD) at the total hip, femoral neck and spine, serum biomarkers of bone turnover - NtX (resorption) and Alkphase B (formation), peripheral quantitative computed tomography (pQCT) at the tibia and Hip Structural Analysis (HAS) and adherence (to exercise) rates.

After 12 months, a significant increase in BMD at the spine was observed with risedronate treatment compared to women in the exercise group or the control group (+1.9%, +0.9% and –0.4%, respectively). The risedronate group also showed greater decreases in rates of bone formation and resorption, as evident by decline in serum levels of NtX and Alkphase B.

Exercise was associated with positive changes in intertrochanter hip structural analysis measures suggesting that exercise improved strength at the hip joint through changes in structure and not BMD. These results will be announced in a forthcoming study, according to the authors.

These findings suggest that prescription for osteopenic postmenopausal women should include both calcium and vitamin D and bone loading exercises. Bisphosphonates such as risedronate may be prescribed in addition for its beneficial effect in increasing BMD.

Laura D Bilek, from the College of Allied Health Professionals, University of Nebraska Medical Center and study coauthor said, "*The key takeaway for clinicians is that bone health is about more than just density! In postmenopausal women, exercise appears to improve strength at the hip through changes in structure, not BMD.*"

Sources: *Waltman N, et al. Bone-loading exercises versus risedronate for the prevention of osteoporosis in postmenopausal women with low bone mass: a randomized controlled trial. Osteoporos Int. 2021 Sep 14. [Epub ahead of print]; Exercise appears to improve bone structure, not density. Medscape. Oct 06, 2021.*

WHO Issues Clinical Case Definition of Post-COVID Condition

To make sure that affected patients receive the required care, the World Health Organization (WHO) has issued a clinical case definition of 'post-COVID condition'. The global health body states that the condition occurs in people with a history of possible or confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, often 3 months from its onset with symptoms, persists for at least 2 months, and cannot be explained by another diagnosis.

According to the definition, the symptoms of post-COVID condition include fatigue, shortness of breath, cognitive dysfunction, besides other symptoms and tend to impact everyday functioning. The symptoms may be new onset after initial recovery from acute coronavirus disease 2019 (COVID-19) or may persist from the initial illness. Additionally, the symptoms may fluctuate or relapse over time.

The agency stated that a different definition may apply to kids… (*Source: ET Healthworld*)

COVID Led to Ninefold More Deaths in People with Learning Difficulties: Study

A study published in the *Lancet Regional Health – Europe* has shown that COVID-19 caused nine times more deaths in people with learning difficulties compared to the general population during the first wave of the pandemic in the United Kingdom.

Investigators looked into over 1,60,000 deaths in the UK between March and June 2020. They noted that deaths from COVID-19 among people having eating disorders were about fivefold higher in comparison with the general population, and fourfold higher among people with personality disorders as well as those with dementia. Moreover, deaths due to COVID were threefold higher in people suffering from schizophrenia.

Individuals with nine different mental health conditions and intellectual disabilities had higher mortality from the viral disease during the period, noted investigators… (*Source: CNN*).

Longer Exposure to Raised LDL Associated with Greater CHD Risk

A new study published in *JAMA Cardiology* suggests that greater exposure to low-density lipoprotein cholesterol (LDL-C) during young adulthood and middle age is tied to a significant increase in the risk of coronary heart disease (CHD), irrespective of lipid levels in midlife.

Pooled data from four prospective studies, which included more than 18,000 participants, having an average age of 56 years, was assessed. Researchers evaluated the potential link between cumulative LDL-C exposure, time-weighted average (TWA)-LDL-C and change in LDL-C slope from young adulthood to middle age and incident cardiovascular disease (CVD). Following adjustment for covariates, people with the greatest cumulative exposure and highest TWA-LDL-C levels had 1.6 times and 1.7 times higher risk of CHD, respectively, in comparison with people with the lowest cumulative exposure and lowest TWA-LDL levels… (*Source: Medscape*)

COVID Led to Sharp Increase in Depression, Anxiety, Says Study

According to a new study published in *The Lancet*, cases of depression and anxiety increased by over a quarter across the globe during the first year of the COVID-19 pandemic, in particular among women and young adults.

According to the first estimate of the impact of the pandemic on mental health globally, it was estimated that there were an additional 53 million individuals who had major depressive disorder in 2020, besides an additional 76 million people who suffered from anxiety. This translates to a 28% and 26% rise, respectively, in the two conditions.

Researchers analyzed the data accumulated from North America, Europe and East Asia and modelled the expected prevalence of depression and anxiety. In the absence of the pandemic, 193 million cases of depression would have been expected, while the number of cases actually observed was 246 million during 2020. Additionally, 298 million cases of anxiety would have occurred in the absence of COVID-19, while the actual number was 374 million in 2020… (*Source: NDTV-AFP & Reuters*)

Study: HEPA Filters may Remove COVID-19 Virus from Air

High-efficiency particulate air (HEPA) filters and ultraviolet (UV) sterilization can be effective in removing SARS-CoV-2 particles from the air, suggest real-world evidence, reported in the preprint server medRxiv.

A study indicates that the filters may have a role in reducing the risk of hospital-acquired SARS-CoV-2, reported the journal *Nature*. HEPA filters were installed in two COVID-19 wards, including a general ward and an ICU. Air samples were collected from the wards during a week when the air filters were operational and 2 weeks when they were off, and the results were then compared. Airborne virus was found in the ward on all 5 days prior to activation of air/UV filtration, while it was not detected on any of the 5 days when the air/UV filter was working. SARS-CoV-2 was detected again on 4 of the 5 days when the filter was nonoperational.

Airborne virus was not frequently found in the ICU, even when the filters were not working… (*Source: Medscape*)

Delta Variant of Coronavirus does not Seem to Cause More Severe Diseases in Children

According to a study conducted in the UK, Delta variant of coronavirus does not seem to result in more severe disease among children compared to earlier versions of the virus.

Investigators assessed two groups of school-age children with COVID-19. Of these, 694 were infected with the Alpha variant from late December 2020 through early May 2021, while 706 had an infection with Delta between late May and early July. Posted on medRxiv, the study showed that children infected with Delta variant had slightly more symptoms. However, very few children needed hospitalization in both the groups, and long

periods of illness were infrequent. Additionally, in both the groups, about half of the children were ill for not more than 5 days. (*Source: Reuters*)

Data from Israel Favor Higher Rates of Post-vaccine Myocarditis

According to two reports from Israel, the incidence of myocarditis following the administration of the Pfizer-BioNTech COVID vaccine appeared to be several-fold higher in comparison with some estimates; however, it continued to be low over late spring this year.

Among patients in Clalit Health Services, the country's largest healthcare system, the estimate of myocarditis was 2.13 cases per 1,00,000 vaccinated individuals, with as high as 10.69 cases per 1,00,000 among men and boys in the 16 to 29 years age bracket.

In another study that used Israel's government database, the findings supported a higher risk in young men. The estimate of myocarditis for males of all ages was 0.64 cases per 1,00,000 individuals following the first dose and 3.83 cases per 1,00,000 following the second shot. The incidence increased to 1.34 and 15.07 per 1,00,000 individuals following the first and second shot, respectively, for boys aged between 16 and 19 years. The studies were published online in the *New England Journal of Medicine*… (*Source: Medpage Today*)

Adolescents Exercising after a Concussion Recover Faster: Study

A randomized controlled trial has suggested that following a concussion, young athletes who resume aerobic exercise relatively early, with an intensity that does not aggravate the symptoms, may recover faster, in comparison with stretching.

Researchers suggested that clinicians must prescribe exercise to promote recovery in patients with a concussion. The study included 118 adolescent athletes, 13 to 18 years of age, who had a sport-related concussion in the previous 10 days. A total of 61 participants were randomized to individualized subsymptom-threshold aerobic exercise, while 57 were assigned to stretching exercise, for a duration of at least 20 minutes a day for up to 4 weeks.

A larger proportion of participants randomized to stretching failed to recover by 4 weeks, compared to those assigned to aerobic exercise (32% vs. 21%). Additionally, the median time to full recovery was 19 days for the stretching group compared to 14 days for the aerobic exercise group… (*Source: Medscape*)

Salty Foods Just before Bedtime Might Disrupt Sleep

A study conducted in mice suggests that salty foods might have a direct impact on sleep, rather than indirectly contributing to sleep problems by increasing the blood pressure.

Mice were found to have similar physical activity levels whether their diets were high in salt or not. However, mice on a high-salt diet appeared to have more neuronal excitability in the suprachiasmatic nucleus at night compared to the ones on a regular diet. The authors stated that neuronal excitability during the night could disrupt the biological clock, making sleep more difficult.

The findings from the study, presented at the virtual 17th International Conference on Endothelin, put forward a reason for people to look at the amount of salt they consume… (*Source: Medscape*)

Children Exposed to Harmful Plastics During Cardiac Surgery

According to a preliminary research, the tubing and other bendable equipment used in cardiopulmonary bypass (CPB) exposed young children to phthalates at levels that might have a clinical significance.

At a hospital, children who received blood products during cardiac surgery were noted to have immediate post-procedural rise in serum levels of diethylhexyl phthalate or DEHP (a median of about 3 μM preoperative to about 5 μM afterward, $p < 0.0001$) and monoethylhexyl phthalate or MEHP (from about 0 μM to about 7 μM, $p < 0.0001$), taking up the total phthalate level from about 4 μM to about 13 μM ($p < 0.0001$). The youngest kids appeared to have more phthalate increases, as postoperative phthalate levels had a correlation with more blood products used, longer bypass time and use of methylprednisolone. The findings were presented at the American Academy of Pediatrics (AAP) virtual meeting… (*Source: Medpage Today*)

AstraZeneca Antibody Cocktail Effective in COVID-19: Study

An experimental COVID-19 antibody drug cocktail developed by AstraZeneca could reduce severe disease or death in nonhospitalized patients in a late-stage study, stated the drug maker.

The drug, known as AZD7442, was found to decrease the risk of developing severe COVID-19 or death by 50% in patients who had been symptomatic for ≤7 days. Executive Vice President, Biopharmaceuticals R&D, AstraZeneca, Mene Pangalos, said that an early

intervention with the antibody drug can significantly reduce progression to severe disease, with persistent protection for over 6 months.

The company is also developing the drug cocktail as a treatment for the protection of people with a weak immune response to COVID-19 vaccines… (*Source: ET Healthworld – Reuters*)

Adults 60 and Above not to Start Daily Aspirin for Prevention of Heart Disease, Stroke: US Task Force

The US Preventive Services Task Force is looking at introducing changes to its guidance on taking aspirin daily to prevent heart disease and stroke.

The task force posted a draft statement which recommends that adults, 40 to 59 years of age, having a higher risk for CVD, but no history of the disease, talk to their clinician about whether to start taking aspirin, on the basis of their individual circumstances.

The draft also states that adults 60 years of age and above should not start aspirin therapy for the prevention of heart disease and stroke, as updated evidence indicates that potential harms negate the benefits. However, the task force recommendation does not apply to people who are already on aspirin for a previous heart attack or stroke. These people must continue taking it unless advised otherwise by their clinician… (*Source: CNN*)

Omega-3 Fatty Acids Decrease Inflammation in Elderly COVID-19 Patients

According to a small randomized controlled trial, treatment with omega-3 fatty acids among frail elderly with COVID-19 may have a role in improving lipid responses and reducing the levels of proinflammatory lipid mediators.

The study, presented at the European Geriatric Medicine Society (EuGMS) annual congress, included 22 patients with several comorbidities. Patients were administered either an intravenous infusion of an omega-3 poly-unsaturated fatty acid (PUFA) emulsion of 10 g fish oil/100 mL or saline placebo. Those who were given the intravenous infusion were found to have a significant reduction in the neutrophil-to-lymphocyte ratio (NLR) from baseline to the end of treatment, which suggested considerable reductions in systemic inflammation. On the other hand, patients administered a saline placebo had no significant improvements in NLR. However, omega-3 fatty acids were not significantly associated with a decrease in C-reactive protein (CRP) or interleukin (IL)-6… (*Source: Medscape*)

New MTP Rules Notified by Center

The government has notified new Medical Termination of Pregnancy (Amendment) Rules, 2021, clarifying the situations that characterize eligibility criteria for termination of pregnancy up to 24 weeks, as compared to the previous limit of 20 weeks.

The criteria for eligibility include survivors of sexual assault, rape or incest, minors, women who have physical disabilities, mentally ill women including those suffering from mental retardation and conditions where fetal malformation has a considerable risk of being incompatible with life. It also includes cases where it is assessed that if the baby is born, it may have physical or mental abnormalities, to be seriously handicapped.

Cases of those women may also be considered where there is change of marital status during the pregnancy, such as widowhood and divorce. Also included are cases of women with pregnancy in a disaster or emergency situation, as declared by the government… (*Source: ET Healthworld – TNN*)

D-dimer Assay may not be Reliable to Rule Out Pulmonary Embolism in COVID-19 Patients

The plasma D-dimer assay has long been used, in association with clinical prediction scores, to rule out pulmonary embolism (PE) in critically ill patients. However, a new study suggests that it may not be an appropriate test for patients hospitalized with COVID-19.

The study revealed that all hospitalized patients with COVID-19 and evidence of PE on radiographic evaluation had plasma D-dimer levels of 0.05 μg/mL or more, the cut-off for diagnosis.

From a sample of 1,541 patients hospitalized with COVID-19 from January 2020 through February 2021 for a suspected PE, investigators compared plasma D-dimer levels with computed tomography pulmonary angiography (CTPA) in 287 patients. A total of 118 patients (41.1%) needed ICU care, and 27 (9.4%) died during hospitalization.

Thirty-seven patients (12.9%) had radiographic evidence of PE, while 250 patients (87.1%) did not. Around 92.3% patients (n = 265) had plasma D-dimer levels of 0.05 μg/mL or more, which included all patients with PE, and 225 out of 250 patients without PE. The study is published online in *JAMA Network Open*… (*Source: Medscape*)

People with J&J Vaccine as First Shot Show Stronger Immune Response with Moderna or Pfizer Jab as Booster: NIH Study

Individuals who received Johnson & Johnson (J&J) COVID-19 vaccine as a first jab were found to exhibit a stronger immune response when boosted with Pfizer/BioNTech or Moderna vaccine in a study conducted by the National Institutes of Health.

The study included over 450 adult individuals who received initial jabs from Pfizer, Moderna or J&J COVID-19 vaccines and revealed that mixing and matching booster shots of various types is safe in adults. Mixing and matching doses for a booster led to similar side effects to those seen in primary vaccinations and were not associated with any significant safety concerns.

Using different types of vaccines as boosters was found to yield a comparable or higher antibody response compared to using the same type… (*Source: Reuters*)

Record High of Drug Overdose Deaths in a 12-month Period in the US: CDC

Drug overdose deaths in the United States reached a record high of over 96,000 in the 12-month period ending March 2021, suggest data from the US CDC's National Center for Health Statistics.

In the 12-month period, 96,779 drug overdose deaths were reported in the country, translating to a spike of 29.6% from March 2020 to March 2021. The CDC stated that these figures represent provisional data. The estimate for predicted deaths, accounting for delayed reporting, was more than 99,000 from March last year to March of this year.

Three states reported a decrease in drug overdose deaths from March 2020 to March 2021. These include New Hampshire, New Jersey and South Dakota. Vermont reported the largest rise in overdose deaths among the states… (*Source: CNN*)

Statins may Provide Slight Protection against COVID-19 Mortality

Statins, the commonly used drugs for reducing cholesterol, may be tied to a slightly lower risk of death due to COVID-19, suggest new data.

A team of researchers at Karolinska Institute, Sweden, evaluated the medical records of around 1 million individuals in Stockholm, aged above 45 years, from March through November 2020. Around 18% of these had been prescribed a statin, such as atorvastatin and simvastatin. Individuals who had been prescribed statins had more risk factors for poor COVID-19 outcomes, including older age, more often male, more health conditions, lower education levels and less disposable income.

Taking all this into account, statin users were found to have a 12% lesser likelihood of death from COVID-19 during the study period. However, the investigators did not compare the outcomes in people who actually got infected. Additionally, the researchers only had data on prescriptions, and not on whether patients took the medicine. Therefore, a clinical trial is needed to confirm the findings, but the authors of the study still conclude that the findings point to a modest preventive effect of statin treatment on COVID-19 mortality. The findings are published in *PLOS Medicine*… (*Source: Reuters*)

Delhi's COVID-19 Outbreak Shows Herd Immunity against Delta Difficult, Says Study

The severe COVID-19 outbreak seen in Delhi in 2021 indicates that the Delta variant of the coronavirus can infect those who have been previously infected by a different variant of SARS-CoV-2, and brings to light the challenges in reaching herd immunity against the variant, suggested a new study.

The study noted that the Delta variant was around 30% to 70% more transmissible compared to the previous lineages of the virus circulating in Delhi. The authors noted that the city's overall seropositivity was 56.1% which could have conferred some protection from future outbreaks through herd immunity. The study was conducted by the National Centre of Disease Control (NCDC) and the Council of Scientific and Industrial Research-Institute of Genomics and Integrative Biology (CSIR-IGIB), New Delhi, in association with the University of Cambridge and Imperial College London, UK and the University, Copenhagen, Denmark.

Previous infection was found to yield only 50% to 90% of the protection against the Delta variant that it provides against previous lineages. The findings were published in the journal *Science*… (*Source: ET Healthworld – PTI*)

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