

News and Views

Predictors of Chronic Diseases in Pregnant Women

The association of hypertensive disorders of pregnancy with risk of future cardiovascular disease (CVD) is well-established. Similarly, gestational diabetes is also a risk factor for diabetes later in life. A team of Japanese researchers conducted a cross-sectional study between April 2017 and November 2020 at a tertiary hospital to examine if gestational glycosuria, proteinuria and borderline hypertension also had a similar correlation with these chronic diseases. For this, they evaluated three parameters: glycosuria, proteinuria and systolic BP (<130, 130-139 and \geq 140 mmHg) during pregnancy in 312 women. Questionnaires were used to find out the self-reported incidences of hypertension, diabetes and kidney disease after 35.8 years of childbirth.

Results published in the *Journal of Obstetrics and Gynaecology Research* show that women with glycosuria were 3 times more at risk of diabetes mellitus with adjusted odds ratio (aOR) of 3.62. Women with proteinuria were 4 times more likely to develop kidney disease with aOR of 4.07. Systolic BP \geq 140 mmHg was significantly associated with risk of hypertension with aOR of 4.26. However, the association between systolic BP 130-139 mmHg and hypertension was nonsignificant (aOR 1.72).

These findings demonstrate a positive association between gestational glycosuria, proteinuria and raised BP with development of chronic diseases such as diabetes, hypertension in older age. Routine screening of these simple parameters during pregnancy can identify at-risk women for timely implementation of preventive actions.

Reference

1. Hosoya S, et al. Gestational glycosuria, proteinuria, and borderline hypertension in pregnancy are predictors for the later onset of maternal chronic disease. *J Obstet Gynaecol Res.* 2023;49(2):641-8.

Spinal Cord Stimulation could Benefit Patients with Diabetic Neuropathy

Among 37 million diabetic Americans, 25% of them have a painful disease, diabetic neuropathy, which results in nerve loss and usually affects the hands and feet, and can cause discomfort and numbness. This study included 216 participants with painful diabetic

neuropathy symptoms unresponsive to treatment for at least a year.

After 6 months, the participants reported an average pain reduction of 76%, compared to a 2% rise in discomfort for those who did not.

Two years later, participants reported 80% improvement in their motor skills, sensitivity and reflexes, and 66% still exhibited progress. Eight people who suffered illnesses by their devices experienced three recoveries, while the other five required device removal owing to infection. Also, participants reported an 80% improvement in their average level of discomfort, and 66% said that their motor function, sensitivity and reflexes had improved. With acceptable safety, high-frequency stimulation reduces pain more effectively than low-frequency stimulation.

Three percent of people had their implants removed due to infection, but none had the gadgets removed due to the device's effectiveness. Additionally, the results show that high-frequency stimulation appears to be more effective at reducing pain than low-frequency stimulation.

This study reveals that high-frequency stimulation offers dependable long-term pain alleviation. Further improvements in motor function, sensation, and reflexes show that this therapy may have disease-modifying potential. More studies were required to confirm the understanding of this spinal cord stimulation therapy for treating diabetic neuropathy. (Source: <https://www.hindustantimes.com/lifestyle/health/diabetic-neuropathy-patients-can-benefit-from-spinal-cord-stimulation-study-101678097408374.html>)

Vitamin D Consumption Might Help Prevent Dementia

Researchers in Canada and the UK investigated the link between dementia and vitamin D intake.

More than 12,388 members of the US National Alzheimer's Coordinating Center, with a mean age of 71 and no dementia at the time of enrollment, participated in the study published in *Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring*.

The percentage of the group that used vitamin D supplements, 37% (4,637), was found to be dementia-free for a lifespan. During 10 years, 2,696 persons from

the overall sample developed dementia; of these, 2,017 (or 75% of them) had no exposure to vitamin D at any point during their visits before being diagnosed with dementia, while 679 (or 25% of them) had baseline exposure.

Although vitamin D was effective in all groups, the team discovered that females experienced effects that were noticeably bigger than those in males. Impacts were more pronounced in those with normal cognition compared to individuals who reported minor cognitive impairment.

The APOEε4 gene increases the chance of developing Alzheimer's dementia. According to scientists, those with the APOEε4 gene had improved intestinal absorption of vitamin D, which might lessen the effects of vitamin D supplementation. Also, it was observed that vitamin D effects were noticeably stronger in those who did not contain the APOEε4 gene than in noncarriers. To verify this theory, no blood samples were taken.

Previous studies have also revealed that vitamin D may assist in protecting the brain from tau buildup, another protein linked to the onset of dementia, and helps remove amyloid from the brain, which builds up in Alzheimer's disease.

Thus the current study concluded that vitamin D intake might help prevent dementia. (Source: <https://theprint.in/health/study-shows-taking-vitamin-d-might-help-prevent-dementia/1420995/>)

CDC Reveals Lasting Effects of COVID Virus on Nearly Every Organ

An updated Center for Disease Control and Prevention (CDC) guidance for certifying deaths due to coronavirus disease has revealed that emerging evidence suggests that COVID virus can have long-lasting effects on almost every organ and organ system of the body weeks, months and possibly years after infection.

Clinical symptoms and COVID-19 consequences in the acute phase, including death, have been recorded in varied degrees. However, those who survive the acute stage of the illness may still experience long-term consequences, often known as "long COVID".

According to the updated CDC recommendations, documented severe post-COVID disorders now include complications of cardiovascular, neurological, pulmonary, endocrine, hematological, renal and gastrointestinal systems along with death. Recent studies from the University of Waterloo in Canada suggest that long COVID has also been linked to lower brain oxygen

levels, decreased performance on cognitive tests, and increased psychiatric symptoms like depression and anxiety.

Pre-existing chronic illnesses, particularly those that cause a reduction in lung capacities, such as chronic obstructive pulmonary disease (COPD) or asthma, might occasionally make it more challenging to recover from COVID. The CDC advice stated that while these medical conditions do not directly cause COVID-19, they can raise the risk of acquiring a respiratory infection and dying from it.

A most recent assessment of 200 COVID-19 studies, published in the journal *Nature Reviews Microbiology*, estimated that at least 65 million people have long COVID. The US-based researchers state that 10% of the more than 651 million COVID-19 instances reported globally have Long COVID. (Source: <https://www.tribuneindia.com/news/health/covid-virus-can-have-lasting-effects-on-nearly-every-organ-for-years-cdc-485714>)

Go Slow on that Cup of Coffee If You have Severe Hypertension

Drinking 2 or more cups of coffee everyday doubles the risk of death due to heart disease among those who are severely hypertensive, according to a study published in the *Journal of the American Heart Association*.¹

A total of 18,609 people from the Japan Collaborative Cohort Study for Evaluation of Cancer Risk were included in this study. They were enrolled between 1988 and 1990 and their ages at the time of recruitment ranged from 40 to 79 years. The study objective was to examine the impact of self-reported coffee and green tea intake on mortality due to heart disease among participants with severe hypertension. Depending on the BP, the participants were categorized into four groups: optimal and normal BP, high-normal BP, Grade 1 hypertension and Grade 2-3 hypertension.

The participants were followed up for a median duration of 18.9 years; during this period, 842 CVD deaths occurred. Coffee drinkers who had Grade 2-3 hypertension were at a higher risk of cardiac-related mortality. Compared to those who did not drink coffee, the risk increased twofold among those who drank ≥2 cups of coffee daily with hazard ratio (HR) of 2.05. The HR for <1 cup/day was 0.98. No such association was observed among participants with optimal and normal, high-normal BP and Grade 1 hypertension. In contrast, consumption of green tea did not increase the risk of CVD in any BP category.

This study shows that drinking too much coffee every day increases the risk of death due to CVD particularly among those who are severely hypertensive. However, intake of green tea did not increase the risk of cardiovascular mortality.

Reference

1. Teramoto M, et al. Coffee and green tea consumption and cardiovascular disease mortality among people with and without hypertension. *J Am Heart Assoc.* 2023;12(2):e026477.

Moderate to Severe Proteinuria and Risk of Adverse Pregnancy Outcomes

Women with proteinuria during pregnancy, ranging from 1,000 to 3,500 mg/day of protein in urine, are at risk of adverse perinatal outcomes, according to a study published in the *Journal of Obstetrics and Gynaecology*.¹

To investigate the association between proteinuria and adverse pregnancy outcomes, researchers recruited 142 pregnant women who had proteinuria during their pregnancy. Data was collected between January 2018 and December 2020. Based on the 24-hour proteinuria, 76 women were categorized as having mild proteinuria (300-1,000 mg/day), 39 had moderate proteinuria with 1,000-3,500 mg/day of protein in the urine, while 27 women had severe proteinuria of more than 3,500 mg/day.

Retrospective analysis of data revealed that women with severe proteinuria were more likely to have fetal growth restriction versus women who had mild proteinuria. Their newborns were also more likely to require intensive care and treatment in the neonatal intensive care unit (NICU).

Compared to mild and moderate proteinuria groups, women in the severe proteinuria group had higher odds of giving birth to preterm and low birth weight infants or neonatal asphyxia. The odds ratio (OR) for adverse perinatal outcomes was 97.2 for moderate proteinuria and 34 for severe proteinuria.

Pregnant women should be closely monitored for proteinuria during pregnancy. This will enable early detection of renal dysfunction. Categorizing the degree of 24-hour proteinuria is predictive of adverse pregnancy outcomes as shown in this study. Timely intervention can improve maternal and fetal outcomes.

Reference

1. Hu M, et al. Association between proteinuria and adverse pregnancy outcomes: a retrospective cohort study. *J Obstet Gynaecol.* 2023;43(1):2126299.

A Steady Rise in TB and Leprosy Cases Seen with Decreasing COVID-19 Cases

The economic survey stated that although COVID-19 cases have been decreasing, diseases like tuberculosis (TB) and leprosy cases are steadily increasing in Maharashtra. According to the report's public health statistics, there were 750 suspected TB cases per lakh people in 2021-2022, and the cure rate was 84%. The corresponding numbers for 2022-2023 were 1,552 and 85% (up to December 2022; same for current and succeeding cases). The report stated that eradicating TB cost Rs. 88.2 crore in 2021-2022 and Rs 75.8 crore in 2022-2023. The survey reported that the leprosy cases were 14,520 and 11,607 in 2021-2022, respectively, with a prevalence rate of 0.89 per 10,000 people. There were 15,945 newly reported cases of leprosy and 16,090 active cases during 2022-2023.

The National TB Program (NTP) was introduced in 1962 and revitalized by the GoI in 1993 and became the Revised National TB Control Program (RNTCP). To control and eradicate TB in India by 2025, the RNTCP has published the "National Strategic Plan for Tuberculosis 2017-2025" (NSP). TB eradication has been incorporated into the four strategic pillars of: detect-treat-prevent-build, claims the NSP. The directly observed treatment short (DOTS) course is one RNTCP approach.

The National Leprosy Eradication Project intends to eradicate leprosy (prevalence of less than 1 case per 10,000 people in all districts), increase disability prevention and medical rehab for those with the disease, and lessen the stigma associated with it. Last week, the Chief Minister, Eknath Shinde, suggested forming a committee by the state government comprising of senior officials and people running NGOs like Prakash Amte and Vikas Amte to decide on a rehabilitation strategy and explore options to find employment for leprosy patients. (Source: <https://health.economictimes.indiatimes.com/news/industry/tb-leprosy-on-the-rise-with-waning-of-covid-19/98505461>)

