

News and Views

Adverse Pregnancy Outcomes: A Risk Factor for Future Heart Disease?

Pregnant women who experience any pregnancy-related complications such as preterm delivery, pre-eclampsia are at high risk of developing heart disease as long as 46 years after childbirth, according to a study from Sweden published in the *BMJ*.¹

Crump et al analyzed data of Swedish women sourced from the Swedish Medical Birth Register between 1973 and 2015 who delivered a single live infant with the objective to study if adverse pregnancy outcomes had a link to the risk of ischemic heart disease (IHD), which was the main outcome measure. None of the selected study subjects had a history of heart disease. For the purpose of the study, they selected five outcomes namely preterm delivery (gestational age <37 completed weeks), pre-eclampsia, small-for-gestational age (infant birth weight <10th centile for gestational age), gestational diabetes and other hypertensive disorders of pregnancy. Small-for-gestational age was the commonest adverse pregnancy outcome in 14.3% followed by preterm delivery in ~9%.

Out of the 2,195,266 women included in the study, 667,774 (30.4%) women developed at least one adverse pregnancy outcome; 181,783 (8.3%) experienced at least two adverse pregnancy outcomes.

Nearly 4% or 83,881 women in the study group were diagnosed with IHD such as acute myocardial infarction (AMI), angina (~38%) during the follow-up period of 46 years. An independent association was observed between all five adverse pregnancy outcomes and increased risk of IHD.

After adjusting for variables like age, education, body mass index (BMI), smoking, diabetes, high blood pressure (BP), high cholesterol levels and smoking, when the risk was assessed at 10 years after childbirth, compared with women who did not have a major adverse pregnancy outcome, those women who had had other hypertensive disorders of pregnancy such as chronic hypertension, gestational hypertension were twice as likely to develop IHD with adjusted hazard ratio (aHR) of 2.09. The risk increased 1.5-fold among women with pre-eclampsia, 1.7-fold in women with preterm delivery, 1.1-fold in those who delivered a small-for-gestational age infant and 1.3-fold in those with gestational diabetes.

This high-risk was seen to persist even when examined four decades (30-46 years) after delivery. The aHR for other hypertensive disorders of pregnancy was 1.47; for pre-eclampsia, the aHR was 1.32; for preterm delivery, the aHR was 1.23 and for gestational diabetes, it was 1.16. "These findings were only partially (<45%) explained by shared familial (genetic or environmental) factors in co-sibling analyses", note the authors.

The risk was found to increase as the number of adverse pregnancy outcomes increased. Those who had experienced more than one adverse pregnancy outcome were at a higher risk of IHD. The risk of IHD within 10 years of childbirth increased 1.2-fold among women with one adverse outcome with aHR of 1.29. The risk was 1.8-fold higher among women who experienced two adverse outcomes with aHR of 1.80, while the risk rose 2.3-folds among those who had experienced three adverse pregnancy outcomes with aHR of 2.26.

Heart disease is a major cause of death among women. Besides chest pain, most symptoms of heart attack in women are often different from those classically associated with heart attack such as shortness of breath, nausea/vomiting and back or jaw pain and run the risk of being ignored.

This study points out the high risk of future heart disease among women who had experienced at least one adverse pregnancy outcome allowing identification of at-risk women.

Being an observational study, it does not conclusively prove the association. Nonetheless, interventions for risk modification of cardiovascular risk factors such as obesity, diabetes, hypertension and smoking should be initiated aggressively at the earliest to prevent heart disease in women who have a history of pregnancy-related complications. A close follow-up is imperative for better outcomes.

Reference

1. Crump C, et al. Adverse pregnancy outcomes and long term risk of ischemic heart disease in mothers: national cohort and co-sibling study. *BMJ*. 2023;380:e072112.

Heart Patients have High Hopes Thanks to Advanced Technologies and Therapies

Recently, the two-day national convention "Cardiology Agra Live 3.0" of cardiologists and heart specialists came

to an end in Agra, Uttar Pradesh. In the convention, delegates expressed their grave concern over the alarming increase in the prevalence of cardiac diseases and argued that cutting-edge technology solutions can save the lives of heart patients. According to experts, modern eating and living patterns are contributing to an avoidable rise in the prevalence of heart ailments.

According to experts, smoking, tobacco use, obesity, high-fat diets, high cholesterol, constant use of TV and mobile devices, inactivity and a patient's family history, all contribute to the increase of blockages in the arteries of the heart. Dr RR Kasliwal, a prominent cardiologist and chairman of Vedanta, advised that people should routinely practice yoga and pranayama to keep their hearts healthy and strong.

Dr Suvir Gupta, the conference's organizing and scientific secretary, advised against taking on too much stress while offering advice on how to maintain a healthy heart. He advised that people seek medical attention if they develop cardiac problems.

Furthermore, Dr Gagandeep Singh of Medanta shared that previously, the patient had to remain in the hospital day and night to detect a heart attack. However, thanks to the high-sensitivity troponin or high-sensitivity blood test, it is now possible to determine right away whether the patient has experienced a heart attack or not. In addition, there is now a machine that can be examined in just 20 minutes and can identify a heart attack.

In the heart failure session, Dr Prabhat Aggarwal stated that although heart failure in diabetes patients continues to be a severe issue, the number of diabetic people dying from heart attacks has decreased recently due to the availability of new therapies and testing technologies. Additionally, Dr Neeraj Kumar stated that dispirin is superior to sorbitrate. Sorbitrate just lessens pain, whereas a dispirin tablet can save a life. (Source: <https://www.newkerala.com/news/2023/16725.htm>)

Study Reveals that Drinking Coffee with Milk can have an Anti-inflammatory Effect

According to a study published in the *Journal of Agricultural and Food Chemistry*, a cup of coffee with milk can have an anti-inflammatory impact on humans. The researchers stated that when proteins and antioxidants are combined, the anti-inflammatory actions of immune cells are doubled.

Researchers from the University of Copenhagen's Department of Food Science and the Department of Veterinary and Animal Sciences worked together on the study to examine how polyphenols interact with

amino acids, the building blocks of proteins. They found that a polyphenol's ability to prevent immune cell inflammation increases when it interacts with an amino acid.

The researchers deliberately inflamed immune cells to test if polyphenols and proteins have anti-inflammatory effects. During the study duration, some cells were given polyphenols, while another set was given different doses of polyphenols that interacted with an amino acid.

The researchers discovered that immune cells treated with polyphenols and amino acids reduced inflammation twice as well as cells treated with only polyphenols. They claimed that previous studies have shown that polyphenols bind to proteins in meat products, milk and beer.

Dr Marianne Nissen Lund explains that the findings showed that the interaction of proteins and polyphenols occurs in some milk-based coffee beverages. She further added that the findings are promising because humans do not absorb polyphenol. As a result, scientists are looking into methods to ensure better absorption of polyphenols in the body by encasing them in protein structures. She also added that this approach has additional benefits as it strengthens the anti-inflammatory effect of polyphenols. (Source: <https://theprint.in/health/study-finds-coffee-with-milk-can-have-anti-inflammatory-effect/1355479/>)

Type 2 Diabetes Might be Reversed by Intermittent Fasting

According to a study published in the *Journal of Clinical Endocrinology & Metabolism of the Endocrine Society*, patients who completed an intermittent fasting diet intervention attained complete diabetes remission, indicated by an HbA1c (average blood sugar) level of <6.5% at least a year after ceasing diabetes medication.

The use of intermittent fasting as a weight loss strategy has grown in popularity in recent years. Dr Dongbo Liu, PhD, of Hunan Agricultural University in Changsha, China, stated that patients with diabetes can achieve remission if they reduce weight by altering their eating and exercise routines.

In the study, 36 diabetic patients participated in a 3-month intermittent fasting diet intervention. The researchers discovered that 90% of participants, including those who received insulin and blood sugar-lowering medication, decreased their diabetes medication after the diet.

The findings of the study also showed that 55% of these participants maintained their diabetes-free status

after going into remission for at least a year. The study also showed that the claims that people who have had diabetes for a shorter amount of time can only attain remission after 0 to 6 years were false. They pointed out that 65% of the participants were diagnosed with diabetes more than 6 years ago.

Dr Liu further added that for many people striving to adequately control their diabetes, the expense of diabetic drugs is a barrier. However, medicine costs dropped by 77% among participants who underwent intermittent fasting. (Source: <https://www.tribuneindia.com/news/health/intermittent-fasting-might-reverse-type-2-diabetes-reveals-study-476908>)

Future Hospitals to Act with Smart Infrastructure

Now that the pandemic has finally passed, the globe is beginning to recover and return to normal. In order to tackle systemic inefficiencies, the global health care industry has recently started to use technology.

The emergence of new technologies like artificial intelligence (AI) has revolutionized every industry, and its application in the health care sector is already changing the general patient experience and how pharmaceutical companies and hospitals run their businesses. AI is an important area of innovation, particularly in hospitals.

Better patient and staff experience: AI provides a wide range of these experiences, including employing AI to review images to speed up patient testing and diagnosis while lowering the likelihood of misdiagnosis.

Modern hospitals are improving the patient experience by monitoring patients with cameras and sensors to lower the chance of falls for patients who are vulnerable and actively monitoring patients to notify health care practitioners of any clinical changes. By using portable Edge computing devices that can collect, store, produce and analyze critical patient data, we can deliver top-notch health care to remote rural locations.

Predictive care using AI: AI will help future medical professionals and health care systems will be able to predict when a person is at risk of having a chronic condition and provide preventive actions before they get worse.

Real-time; real results: In a hospital, IT/OT integration allows medical devices to communicate and share patient data via IoT connections for real-time visibility, improving patient analysis and results. According to

estimates, nearly one-third of smart gadgets now on the market are found in health care facilities.

Thus AI provides an integrated and thorough breadth of expertise in each health care facility domain. (Source: <https://health.economictimes.indiatimes.com/news/hospitals/the-importance-of-ai-for-future-ready-hospitals/97672951>)

Study Reveals Many Patients do not Receive Much Rehabilitation Therapy after Stroke

A recent UCLA-led study found that many stroke patients do not receive much rehabilitation therapy after a stroke, even though higher levels can improve long-term disability. The study followed over 500 patients across 28 acute care hospitals in the first year after a stroke. A welcome finding of the current study, published in the peer-reviewed journal *Stroke*, is that patients with more severe strokes received more rehabilitation therapy than patients with less severe strokes.

According to experts, the brain is set to undergo maximum rewiring in the first few weeks following a stroke to help patients get back on their feet. Rehabilitation therapy aids in this rehabilitation to the fullest extent possible, yet, our study revealed that most patients only receive modest amounts of rehabilitation therapy.

Results showed that many of the study's patients who were followed up did not receive any form of rehabilitation after their stroke. A third of patients had not had physical treatment, nearly half had not received occupational therapy, and more than 6 in 10 had not received speech therapy after 3 months.

Among those who received rehabilitation therapy, the typical number of sessions was 6 to 8 by 3 months following their stroke and between 0 and 1½ sessions the rest of the year.

Also, patients who were sent after being admitted to the hospital mattered. Despite the severity of the stroke, patients who were sent home received the least amount of rehabilitation therapy. Patients from Hispanic backgrounds received significantly less occupational and physical treatment.

Thus, the study concluded that future studies must look into the viability of giving stroke patients higher rehabilitation therapy doses and ensure their well-being. (Source: <https://theprint.in/health/research-reveals-patients-receive-too-little-rehab-therapy-after-stroke/1358013/>)

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