Selenium deficiency linked to deadly heart disease affecting pregnant women

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Researchers have found a close link between selenium deficiency and Peripartum Cardiomyopathy (PPCM), a heart disease that affects pregnant women and recent mothers. The study of patients in Nigeria also showed that rural women were three times more likely to develop the disease, according to a doctoral dissertation at Umeå University.

Kamilu Karaye, a doctoral student at Department of Public Health and Clinical Medicine, carried out studies of 54 PPCM patients and 77 controls in three referral hospitals in Kano, Nigeria. The results show that 77 percent of the PPCM patients had critically low selenium blood levels. Researchers also found that rural residency was a factor that increased the chance of having PPCM by almost threefold.

"Before this study, we suspected that selenium deficiency could be a possible risk factor for PPCM," says Kamilu Karaye. "If proven further in larger studies, our observation about the link between selenium deficiency and PPCM could lead to the development of a cure for the disease, at least in some of the patients around the study area, by selenium supplementation of foods."

PPCM is a heart disease affecting mostly pregnant women and young mothers, usually manifesting from the last months of the pregnancy until five months after the birth. Many of the women affected are of African descent. In northern Nigeria, PPCM could affect 1 in every few hundred pregnancies. The causes of PPCM are still not well understood, but the disease leads to a dilation of the heart's left and right ventricular

chambers, resulting in a weakening of the heart contractions and even death.

In a follow-up one year after diagnosis, 41.4 percent of the patients in the study had died, two thirds of them within the first 6 months of diagnosis. One year after diagnosis, many of the PPCM patients had significant improvement in heart function in their left and right ventricular chambers. 47.1 percent of the patients still alive had significant improvement of left ventricular function. Heart dysfunction in the right ventricle was found in 71.1 percent of the patients at diagnosis. In follow-up at 6 months and one year, only 36.4 percent and 18.8 percent respectively had the same problem, implying significant right ventricular functional recovery.

The study also showed that that electrocardiographic (ECG) indices could be used to diagnose PPCM with 83.8 percent accuracy, prior to confirmatory investigations.

"It is important to understand that PPCM is a 'killer disease' in sub-Saharan Africa and that the first six months of the disease seem to be of critical significance. Therefore, all hands should be on deck to medically support the affected patients during this critical period," says Kamilu Karaye, who also works as a Consultant Cardiologist in Aminu Kano Teaching Hospital, in Kano, Nigeria.

Kamilu Musa Karaye was born and works in Kano, Nigeria, and is presently a Professor of Medicine in Bayero University and Consultant Cardiologist in Aminu Kano Teaching Hospital. His passion for PPCM was borne out of his personal observations on the disease, and the fact that it is still not well understood.

Provided by Umea University

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