Essentials of Health

A new study has found that maternal vitamin E status during the first trimester of pregnancy may influence the risk of early miscarriage in women.

Vitamin E status in women and the risk of miscarriage in early pregnancy

Tocopherols are a family of vitamin E compounds found naturally in vegetable oils, nuts, fish, and leafy green vegetables. The nutritional benefits of vitamin E and its importance in the human diet have been well documented. However the diets of many Americans provide less than the recommended amounts of vitamin E. Low fat diets, GI tract disorders, and certain medications can further impact the availability and absorption of vitamin E.

Originally tocopherols were discovered for their role in animal reproduction, but little to date has been known about the contribution of vitamin E deficiencies in human pregnancy loss. A new study published in the *American Journal of Clinical Nutrition* has shown that maternal vitamin E status in the first trimester may influence the risk of early pregnancy loss. This is believed to be the first population study of early pregnancy vitamin E nutritional status and the risk of miscarriage in a human population.

The study was conducted in rural Bangladesh, a typically undernourished population. The researchers measured alpha-tocopherol and gamma-tocopherol plasma status of a case-cohort study of 1,605 pregnant Bangladeshi women. 1,161 of the women (72.3%) had low-to-deficient vitamin E status defined by a plasma alpha-tocopherol concentration of <12.0 µmol/L. The most important finding was that women with low alpha-tocopherol concentrations were almost twice more likely to miscarry than women with normal status. Women with low gamma-tocopherol status were also significantly more likely to miscarry than those with higher concentrations.

The cutoff of plasma alpha-tocopherol concentration 12.0 µmol/L was proposed to define vitamin E deficiency in normal, healthy adults. However, it should be noted that currently there is no clearly defined consensus on the definition of vitamin E deficiency in pregnant women because alpha-tocopherol concentrations increase with blood lipids over the course of pregnancy.

While these findings show an association between adequate alpha-tocopherol status and reduced risk of miscarriage in human populations, future studies exploring the potential beneficial effects of adequate vitamin E status during pregnancy are warranted.

Ahmed Shamim A, Schulze K, Merrill RD, et al. First trimester plasma tocopherols are associated with risk of miscarriage in rural Bangladesh. Am J Clin Nutr February 2015.

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