Preconceptional folic acid supplements are associated with reduced risk of premature birth

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Taking folic acid supplements for at least a year before conception is associated with reduction in the risk of premature birth, according to a study by Radek Bukowski (from the University of Texas Medical Branch, United States of America) and colleagues, published in this week's *PLoS Medicine*.

Although most pregnancies last about 40 weeks, many babies (for example around 12% in the United States) are born before 37 completed weeks of pregnancy. Babies born prematurely are less likely to survive than full-term babies and are more likely to have breathing difficulties and learning or developmental disabilities. Currently, there are no effective methods of prevention or treatment of premature (preterm) birth, but previous studies have suggested that lower concentrations of folate (folic acid) are associated with shorter duration of pregnancy. Bukowski and colleagues therefore tested this idea, by analyzing data collected from a cohort of nearly 35,000 pregnant women.

The results of this study showed that taking folate supplements for at least one year before conception was associated with a 70% reduction in spontaneous premature birth between 20 and 28 weeks (a reduction from 0.27% to 0.04%), and a 50% reduction between 28 and 32 weeks (reduction from 0.38% to 0.18%), as compared to the rate of preterm birth when mothers did not take additional folate supplementation. Folate supplementation for less than a year before conception was not

linked to a reduction in the risk of premature birth in this study, and folate supplementation was not associated with any other complications of pregnancy.

In a related commentary also published in this week's *PLoS Medicine*, Nicholas Fisk from the University of Brisbane, Australia, and colleagues (who were not involved in the original study) say "Methodologically, the study has several strengths... It is based on a huge dataset, with prospective recording of dietary supplements and potential confounders, and gestational age determined accurately on first trimester ultrasound. Those born preterm because of intervention were appropriately censored." Nevertheless, Nicholas Fisk and colleagues also point out limitations to the study - for example, this was a secondary analysis of a Down syndrome screening study, so information on folic acid dose, formulation (with or without other supplements), and daily compliance is incomplete. The study design was observational, so the presence of other factors, such as healthier behaviors on the part of women who take folate supplements, may explain the findings. Further evidence as to whether folic acid prevents spontaneous preterm birth will require a randomized controlled trial.

Source: Public Library of Science (news : web)