

Folic Acid Intake and Neural Tube Defects: Two Egyptian Centers Experience.

Summary

Neural tube defects (NTDs) are a group of congenital malformations with worldwide distribution and complex etiopathogenesis. Folic acid plays a pivotal role in their prevention. We aimed to identify the protective effect of folic acid intake against NTDs and its dependence on different socioeconomic and environmental factors in a cohort of mothers in Egypt.

A cross-sectional study was carried over a period of 12 months on mothers who gave birth to babies with NTDs (group 1) and a control group with healthy offsprings (group 2). Both groups completed 2 questionnaires: food frequency questionnaire targeting the daily folate intake, and socioeconomic status and medical history questionnaire.

Both groups of mothers received folate $<800\mu\text{g/day}$, recommended for pregnant women. A strong association was detected between NTDs and urban residency with medium educated mothers, with negative consanguinity, who had folate intake $<400\mu\text{g}$ daily, and who had their food long cooked. Each of these factors separately had a limited impact to cause NTDs, but when present together they did augment each other. Interestingly enough is the role of fava bean, cauliflower, spinach, and mango in predisposing of NTDs in the presence of the above-mentioned factors.

The protective effect of folic acid intake against NTDs may depend on the synergism of different socioeconomic and environmental factors (which differ from country to another). In Egypt, females especially the medium-educated who live in urban areas should be well-informed with the value of folate intake in the periconceptional period.