



Contact:

Jennifer Beal

+44 (0) 1243 770633

+44 (0) 7802 468863

medicalnews@wiley.com

Don't Block Folic Acid in Early Pregnancy: Medications That Block Folic Acid Are Associated With Increased Abnormalities

Using medication that reduces or blocks the actions of folic acid during the first trimester of pregnancy (weeks 1-12), increases the risk that the growing baby will develop abnormalities. This conclusion was reached by a team of Epidemiologists, Paediatricians, Clinical Pharmacologists, Obstetricians and Gynaecologists who examined birth and abortion data collected in Israel between 1998 and 2007.

The study drew information from 84,832 babies born at Soroka Medical Center, in Beer-Sheva, Israel. It was carried out as part of the PhD dissertation of Mgr. Ilan Matok, supervised by principal investigators Dr. Amalia Levy and Prof. Rafael Gorodischer from Ben-Gurion University of the Negev in Israel, in collaboration with the Division of Clinical Pharmacology, Hospital for Sick Children in Toronto, Canada (the BeMORE collaboration).

"After studying the data we concluded that first trimester exposure to folic acid antagonists is associated with increased risk for neural tube, cardiovascular and urinary tract defects," says paediatrician and clinical pharmacologist Rafael Gorodischer.

Healthcare professionals now encourage women to take folic acid supplements or eat food fortified with folic acid if they are planning to get pregnant as well as during early pregnancy, because there is clear evidence that this reduces the risk of any resulting baby having neural tube defects and possibly other birth defects (congenital malformations).

The team considered the effects of two groups of medications on pregnancy. Each group consists of drugs that prevent folic acid working in the body. One group (dihydrofolate reductase inhibitors), prevents folate being converted into its active metabolites and includes trimethoprim, sulfasalazine and methotrexate. The other medications are known to lower serum and tissue concentrations of folate by various mechanisms, and include antiepileptics (carbamazepine, phenytoin, lamotrigine, primidone, valproic acid and phenobarbital), and cholestyramine.

"The study shows that exposure to folic acid antagonists in the first trimester of pregnancy, more than doubled the risk of congenital malformations in the fetus, and that neural tube defects, such as spina bifida and malformations of the brain, are increased by more than six fold after exposure to these antagonists," said epidemiologist Dr. Amalia Levy.

“Clinicians should try to avoid the use of these drugs whenever possible in women contemplating pregnancy,” concluded Gorodischer.

This study is published in the *British Journal of Clinical Pharmacology*. Media wishing to receive a PDF of this article may contact medicalnews@wiley.com

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About the Authors:

Dr. Amalia Levy is based at the Department of Epidemiology and Health Services Evaluation, Faculty of Health Sciences, Ben Gurion University of the Negev. Prof Rafael Gorodischer is based at the Department of Pediatrics, Faculty of Health Sciences, Ben Gurion University of the Negev, and also at Soroka Medical Center and at the Southern District of "Clalit" Health Maintenance Organization.

To interview one of the authors, please contact Prof Gorodischer on rafaelg@bgu.ac.il or Dr. Levy on lamalia@bgu.ac.il. Questions are preferred in email form and telephone calls can be arranged if necessary.

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