

syndrome. A study comparing cognitive profiles of children aged 7-16 years with MS (n=9) to those with ADEM (n=9) found impairments across all cognitive domains with differences in severity and spread. The transient white matter disruption in ADEM results in subtle cognitive impairments, while the multiple white matter insults in childhood MS are associated with more severe cognitive sequelae (Deery B et al. *Dev Neuropsychol* 2010;35(5):506-521).

## CONGENITAL MALFORMATIONS

### **MAJOR BIRTH DEFECTS AND NEWER ANTIEPILEPTIC DRUGS**

The association between fetal exposure to newer-generation antiepileptic drugs during the first trimester of pregnancy and the risk of major birth defects was studied by researchers at the Statens Serum Institut, Copenhagen, Denmark. Cases of birth defects diagnosed within the first year of life following fetal exposure to AEDs were identified through the National Patient Registry, Jan 1996 through March 2009. Dispensed AEDs to mothers were ascertained from nationwide registries. Of 1532 infants exposed to lamotrigine, oxcarbazepine, topiramate, gabapentin, or levetiracetam during the first trimester, 49 (3.2%) were diagnosed with a major birth defect compared to 2.4% of unexposed infants. The prevalence of major birth defects following exposure to individual AEDs was 3.7% following lamotrigine, 2.8% with oxcarbazepine, 4.6% with topiramate, 1.7% with gabapentin, and 0 following levetiracetam. First-trimester exposure to newer-generation AEDs compared to no exposure was not associated with an increased risk of major birth defects diagnosed in the first year of life. (Molgaard-Nielsen D, Hviid A. Newer-generation antiepileptic drugs and the risk of major birth defects. *JAMA* May 18, 2011;305(19):1996-2002). (Response: Ditte Molgaard-Nielsen, MSc, Artillerivej 5, 2300 Copenhagen 5, Denmark.. E-mail: [dnl@ssi.dk](mailto:dnl@ssi.dk)).

COMMENT. The authors comment that unadjusted estimates did show a significant association between exposure to any newer AED or lamotrigine alone during the first trimester and risk of major birth defects. A significantly increased risk of eye defects was observed for lamotrigine, but only 4 infants were exposed and affected. After adjustment for older-generation AED use and epilepsy, no associations remained. Older-generation AEDs are associated with a 2- to 3-fold increased risk of major birth defects, and some of the mothers were treated with both older and newer generation AEDs. In this study, maternal epilepsy was associated with a moderately increased risk of birth defects and was regarded as a confounder. A meta-analysis shows that untreated women with epilepsy are not at increased risk of having infants with birth defects compared with healthy women (Fried S et al, 2004).

### **MALFORMATIONS AFTER FETAL EXPOSURE TO AED IN UTERO ASSESSED AT BIRTH AND 12 MONTHS LATER**

Researchers at Universities of Melbourne and Queensland, Australia, compared the incidence and natures of fetal malformations (FMs) recognized at birth with those