Valproate in Utero May Affect Child’s Language

BY MICHELE Q. SULLIVAN

SAN FRANCISCO — Infants most of whose mothers used antiepileptic drugs during pregnancy may be more likely to have greater and not smaller language abilities than children who were not exposed to valproate, phenytoin, carbamazepine, lamotrigine, or phenytoin, according to a new study presented at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy.

The study, presented by Gus A. Baker, Ph.D., said at the World Congress of Neurology, concluded that vertical exposure to valproate in utero is associated with a 10-point difference in measures of expressiveness and receptive language, visual motor construction, and nonverbal intellectual ability.

The researchers, based on a prospective, longitudinal study of 158 pregnant women and their infants born vaginally or by cesarean section, found that children born to mothers who used valproate, phenytoin, carbamazepine, lamotrigine, or phenytoin during pregnancy scored lower, but not significantly lower, on measures of receptive and expressive language, visual motor construction, and nonverbal intellectual ability compared with exposure to sodium valproate, carbamazepine, or lamotrigine.

The researchers, led by the Walton Centre for Neurology and Neurosurgery in Liverpool, England, concluded that vertical exposure to valproate in utero is associated with a 10-point difference in measures of expressiveness and receptive language, visual motor construction, and nonverbal intellectual ability.

"Without a cohesive and intact language system, a child’s neurodevelopmental progress will be limited," Dr. Baker said.

"Well over a third of those exposed to valproate have been referred for speech therapy, so we see that this 10-point difference has real meaning in terms of day-to-day practice."

Mother-to-Infant S. aureus Transmission Horizontal

BY ROBERT FINN

SAN DIEGO — Infants most often acquire Staphylococcus aureus infections from their mothers horizontally after birth and not vertically during birth, based on a prospective, longitudinal study of 158 pregnant women and their offspring.

Of the participating women, 54 (34%) were S. aureus carriers, and 17 of the children born to them (31%) acquired S. aureus before discharge, Dr. Eyal Leshem and colleagues at Chaim Sheba Medical Center, Tel Hashomer, Israel, wrote in a poster presentation at the annual Interscience Conference on Antimicrobial Agents and Chemotherapy, sponsored by the American Society for Microbiology.

By contrast, only 3% of the children born to noncarrier mothers acquired S. aureus. The investigators found that "the mother's carriage status was a very strong predictor of the infant's status. Children born to carriers were 22 times more likely to acquire S. aureus than other children. The investigators controlled for the sex of the child, carriage status of the mother, breastfeeding, gestational age, antibiotic treatment, type of delivery, and smoking status. This increase in risk was highly statistically significant.

The only other statistically significant predictor of mother-to-infant transmission was smoking status.

Of the 54 maternal carriers, 38 were nasal carriers, 9 were vaginal carriers, and 7 were both vaginal and nasal carriers. Among 11 of the newborns who acquired S. aureus from their carrier mothers, 9 had strains that were genetically identical to the mother's nasal strain, but only 2 had strains identical to the mother's vaginal strain. This suggests that the transmission was horizontal rather than vertical.

Two other pieces of evidence supported the hypothesis that most transmission was horizontal. Only 5% of newborns who acquired S. aureus by 1 hour after birth, but this figure increased to 8% at 24-48 hours and to 12% 72-100 hours. Also, there were no significant differences in transmission rates between infants born vaginally and those born by cesarean section. If a vertical transmission were dominant, one would expect a greater rate of transmission in vaginal births.

Chronic Kidney Disease Ups Risk For Poor Pregnancy Outcomes

BY DOUG BRUNK

SAN DIEGO — Although pregnant women with chronic kidney disease face an elevated risk of adverse maternal and fetal outcomes, most are able to deliver a surviving newborn, according to results from a multicenter study.

"Renal impairment was the most important predictor for both maternal and fetal complications."

The current analysis is believed to be the second largest of its kind and supports earlier findings in the medical literature, Dr. Mohammed Alghonaim said in an interview during a poster session at the annual meeting of the American Society of Nephrology.

"These women need vigilant care," said Dr. Alghonaim of the nephrology section in the department of medicine at King Saud University, Riyadh, Saudi Arabia. "If they’ve had a previous pregnancy, I would not advise them to get pregnant again if they have advanced-stage chronic kidney failure because of the potential for adverse maternal and fetal outcomes."

In a study led by his associate at the university, Dr. Abdulkareem Alsuwaida, researchers at five tertiary hospitals in the Middle East reviewed 101 pregnancies in women (mean age, 32 years) with chronic kidney disease to estimate the rate of fetal, maternal, and neonatal complications.

The mean serum creatinine concentration was 81.2 μmol/L, and the mean 24-hour urine proteinuria was 1.97 g/day. A total of 21 women (21%) had renal impairment, with a mean serum creatinine of 144 μmol/L. In 10 pregnancies (10%), levels of serum creatinine rose more than 25% from preconception levels. Overall maternal and fetal complications included cesarean section (39%), preeclampsia (23%), preterm delivery (22%, with 4% delivered at less than 30 weeks’ gestation), and intratubal growth retardation (19%). Six infants (6%) were stillborn.

"Renal impairment was the most important predictor for both maternal and fetal complications," Dr. Alghonaim said.

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Disclosures: Dr. Alghonaim said he had no financial conflicts of interest.

Disclosures: Dr. Leshem and associates reported no conflicts of interest.

Disclosures: Dr. Baker, a primary investigator in the U.K. study and coinvestigator in the overall study, reported no conflicts of interest.