Vitamin Therapy Failed to Reduce Preeclampsia

BY DOUG BRUNK

SAN DIEGO — Antioxidant vitamins C and E given prior to 17 weeks' gestation in nulliparous, low-risk women do not reduce the frequency of serious maternal and perinatal complications associated with pregnancy-related hypertension.

Nor do the vitamins reduce the diagnosis of preeclampsia, according to findings from a 5-year study of more than 10,000 women conducted by the Eunice Kennedy Shriver National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network, Bethesda, Md.

In the randomized, placebo-controlled, double-blinded trial of low-risk nulliparous women, Dr. James M. Roberts and his colleagues at 16 centers in the United States allocated 10,154 women to daily treatment with 1,000 mg vitamin C and 400 IU vitamin E or placebo at 9-16 weeks' gestation.

Vitamins C and E did not reduce complications associated with pregnancy-related hypertension.

DR. ROBERTS

The primary outcome was severe pregnancy-related hypertension (defined as a systolic blood pressure greater than 160 mm Hg or a diastolic pressure greater than 110 mm Hg), or mild pregnancy-related hypertension (defined as a blood pressure reading of greater than 140/90 mm Hg), with at least one of the following: renal or hepatic dysfunction, thrombocytopenia, eclampsia, indicated preterm delivery prior to 32 weeks' gestation, small for gestational age infant, stillbirth, or neonatal death up to discharge, Dr. Roberts explained at the annual meeting of the Society for Maternal-Fetal Medicine.

Dr. Roberts, professor of obstetrics, gynecology, and reproductive sciences at the Magee-Womens Research Institute at the University of Pittsburgh School of Medicine, reported that the women had a mean age of 24 years, their mean prepregnancy body mass index was 25 kg/m^2, 16% were smokers, 44% entered the trial by 13 weeks' gestation, and 77% entered the trial taking multivitamins.

Pregnancy outcome data were available on 9,969 women (4,993 in the vitamin treatment group and 4,976 in the placebo group). There were no significant differences between the treatment and control groups in terms of hypertension as a composite outcome (6.1% vs. 5.8%, respectively) or in the incidence of preeclampsia (7.2% vs. 6.7%).

The only difference in outcomes between the two groups was observed in the rate of gestational hypertension, which was 2.6% higher in the treatment group, compared with controls, though this difference was not statistically significant. Failing that, "everything was identical between the two groups," including rates of admission to the neonatal intensive care unit, respiratory distress syndrome, and sepsis, Dr. Roberts said.

"Why doesn't antioxidant therapy reduce the frequency of preeclampsia or adverse outcomes?" he asked. One possibility is that not all women develop preeclampsia due to the same linkage between reduced placental perfusion and abnormal implantation. It may be that only a subset of women benefit from treatment to reduce oxidative stress. "This is an important possibility that we will be testing in another part of this study." Dr. Roberts reported having no conflicts of interest to disclose. ■