Do Nutritional Supplements Prevent Effects of Prenatal Alcohol Exposure?

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We have been aware for some time that Fetal Alcohol Syndrome (FAS) is reported more frequently in disadvantaged populations. For instance, FAS is diagnosed more often among Native Americans in the United States and Canada and in the Colored minority in South Africa. These are groups of people who have lower incomes, fewer social resources and more social and medical problems. Naturally, people have wondered why this is the case. Is alcohol use more common in disadvantaged groups or are these groups more vulnerable to the effects of alcohol for some reason? One theory is that poor nutrition during pregnancy may affect the child’s outcome. Inadequate nutrition might come about because women do not have money for food and medicine, like prenatal vitamins and minerals. It is also possible that drinking alcohol might affect how the body is able to use nutrition.

To examine this question, we carried out a clinical trial in the Western Ukrainian cities of Rivne and Khmelnytsky with the support of OMNI-Net, a network of educational and research sites focused on the prevention of birth defects. We selected Ukraine because many women there drink and it reports a high number of FAS cases. We recruited pregnant women who drank alcohol during pregnancy and non-drinking women as controls and followed them until their children were 12 months old. To examine the effects of nutrition, we provided half of each group of women prenatal vitamin and mineral supplements. Half of the supplement group also received choline, a nutrient that has been suggested as a treatment for Fetal Alcohol Spectrum Disorders (FASD). When they were 6 months old, we tested 367 children to determine their problems solving, early language and motor development.
We found that children’s development in all areas was lower if the mother drank alcohol and the more alcohol used, the more effects were seen. We also found that boys were more vulnerable than girls to mother’s drinking. However, if the mother received the micronutrient supplement, scores on the mental scales were higher. Motor scores were not improved by nutritional supplements. Choline supplementation did not have a positive effect in this study.

The answer to the question in the title, “Do Nutritional Supplements Prevent Effects of Prenatal Alcohol Exposure?” is “No.” The risk of alcohol use in pregnancy is well known and we have not yet found effective methods to prevent these effects. The results of this study do not suggest that vitamins and minerals will allow alcohol use during pregnancy in any population. However, half of all pregnancies in the United States are unplanned and many women are concerned about exposure during the prerecognition period. This study suggests that a healthy life style and good prenatal care can support more positive outcomes than would have occurred otherwise. This problem is of particular importance in populations that may be at risk due to environmental or social factors.

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