Prenatal Alcohol and Drug Exposure and Prematurity

Most children are born after 40 weeks of pregnancy (gestation). Children born before 37 weeks gestation are considered preterm and are at risk for higher mortality as well as a number of health and developmental problems. This is true even for what used to be considered “late preterm”, that is, 34 to 36 weeks gestation. It is an unwelcome surprise to most of us, to find that the possibility of being born preterm is higher in the United States than in most of the rest of the world. In 2015, our preterm birthrate was 11.5%. In contrast, the rate developed countries in the rest of the world was between 5 and 7%. In 2010, the USA had a higher percentage of preterms than Thailand, Turkey, Somalia and the Republic of Moldovia. We were number six on a list of the 15 countries accounting for the majority of the world’s preterm births.

To study the contribution of alcohol and other drug use to these troubling trends, we examined the relationship between alcohol use in pregnancy and preterm birth. In an article published in 2011, Patra et al. did a meta-analysis that examined data from 14 studies on the relationship between number of drinks a day that a woman drank and the risk for having a preterm child. They found that as the number of drinks increased from 1 to 7 per day, the risk of a preterm delivery increased from less than that of nondrinkers to twice as much. This is called having a relative risk (RR) and in this analysis the RR was 1.96 for the heaviest drinkers.

In a study we carried out in the Ukraine (whose national preterm rate is only 6.5%), the effect of drinking in pregnancy on prematurity was examined. In doing this analysis, we also examined several other factors that might contribute to early delivery. These included: the mother’s and father’s ages, maternal health, number of previous children, access to prenatal health care, socioeconomic status (SES), site where the study was carried out, and smoking and
other drug use. In some previous studies, for instance, both SES and smoking have been related to prematurity. To examine the mother’s alcohol use, we looked at the number of ounces of absolute alcohol she reported drinking before pregnancy was recognized as well as in the first trimester. We also looked at measures of alcohol abuse called the TWEAK and the AUDIT that are more likely to be positive for women with a drinking problem. For the current analysis, we used data from 686 mother/infant pairs who were recruited prenatally and only included those who were nondrinkers or who admitted to drinking.

We found that in the Western Ukrainian sample, the overall preterm rate was 7%. When this was divided into the Drinkers and Nondrinkers, we found that the drinkers’ rate was 9.9% and the nondrinkers’ rate was 4.1%. This means the relative risk of having a preterm child for drinkers was 2.6% or more than 2 ½ times greater.

To determine whether other factors also contributed to this risk since these things might be more common in women who drink in pregnancy, we examined the impact of prenatal care, maternal age, SES, Cigarette smoking, Child’s sex and the city where the data was collected. In addition to the alcohol measures, only access to prenatal care and SES were significantly related to gestational age. The results of this study indicate that starting prenatal care later, being of lower socioeconomic status and using alcohol led to a higher risk of preterm birth.

These results demonstrate the importance of access to health care and support for abstinence during pregnancy for all women but particularly those already at risk due to poverty and social disadvantage.

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References and further information:


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