THE EUROPEAN SOCIETY OF MEDICINE
Medical Research Archives, Volume 12 Issue 10

RESEARCH ARTICLE

Alcohol use in early pregnancy: How to counsel your patient

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OPEN ACCESS

PUBLISHED
30 October 2024

CITATION
Schauberger, CW., et al., 2024. Alcohol use in early pregnancy: How to counsel your patient. Medical Research Archives, [online] 12(10). https://doi.org/10.18103/mra.v12i10.5932

DOI
https://doi.org/10.18103/mra.v12i10.5932

ISSN
2375-1924

ABSTRACT

Purpose:

Counseling pregnant people about alcohol use in pregnancy is a standard part of obstetric care. However, patients may have consumed alcohol between conception and recognition of the pregnancy. Advice is frequently lacking regarding the effects of drinking alcohol during the interval between conception and recognition of the pregnancy.

Description:

Alcohol consumption is very common in the first trimester. Many people are unaware of the abortifacient effects of alcohol consumption in early pregnancy. Early alcohol consumption may be associated with later complications, including premature birth. Risks of neurodevelopmental impacts from alcohol consumption during early pregnancy are quite low, if alcohol use is discontinued. Obstetrical care providers should screen for early alcohol use and caution against continued drinking.

Conclusion:

While there is no certainty that can be assigned to the likelihood of good outcomes, patients can be reassured that the risks of neurodevelopmental complications are low from brief early alcohol exposure prior to identification of the pregnancy. However, risks of spontaneous abortion and premature birth remain.

Patients are often concerned about the effects of drinking alcohol during pregnancy. However, many women who would not knowingly drink alcohol during pregnancy may find that they did consume in the interval between conception and their awareness of pregnancy. Giving advice about drinking to patients who are trying to conceive and during pregnancy is a common part of obstetric practice, but the published literature on effects of alcohol exposure at any point during pregnancy is not always clear and often not readily available for obstetric care providers.[1]

Alcohol use during pregnancy is surprisingly common. Floyd et al from the Centers for Disease Control and Prevention (CDC) reported that 45% of all pregnant people surveyed in the 1988 National Maternal and Infant Health Survey reported consuming alcohol during the 3 months prior to finding out they were pregnant. Patients with the highest risk of alcohol exposure were identified as being white, non-Hispanic, over 25 years of age, and college educated.[2] However, these patients may receive less screening and intervention from prenatal providers because of unintentional biases regarding the presumed demographics of patients likely to have substance use issues. Based on 2015-2018 National Survey on Drug Use and Health data, CDC researchers estimated that 19.6% of pregnant women drank and 10.5% binged in the first trimester, and in the second or third trimester 4.7% of women drank and 1.4% binged.[3] The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of drinking alcohol that brings blood alcohol concentration to 0.08% or higher, corresponding to four or more drinks in approximately 2 hours for a "typical female" adult.[4]

If we don't ask, patients may not disclose early pregnancy drinking but may still worry about it. We need to universally screen early in pregnancy using tools such as T-ACE (Figure 1). For patients who acknowledge that alcohol use may be a concern, Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an important tool to help patients who would benefit from increased care for AUD.[5,6]

Figure 1: T-ACE- Short assessment of Alcohol Consumption[5]

T How many drinks does it take to make you feel high (TOLERANCE)?

A Have people ANNOYED you by criticizing your drinking?

C Have you felt you ought to CUT DOWN on your drinking?

E Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (*EYE-OPENER*)?

- *T-ACE is positive with a score of 3*
  - T=2 (takes >2 drinks to feel high)
  - ACE=1 (for each yes)
  - Cut based on predictive validity for long term neurobehavioral outcomes (high sensitivity (79%) and better specificity than original scoring of 2 (81%)[5,6]

Numerous studies have described higher risks of miscarriage in women with alcohol consumption in early pregnancy. Sundermann et al reported a systematic review and meta-analysis of 24 studies demonstrating an odds ratio of 1.19 (CI 1.12-1.28), which would raise the rate of miscarriage from roughly 20% to 22%.[7] In a subsequent paper, Sundermann et al described an 8% increased cumulative risk of miscarriage associated with every week of continued drinking, not adjusting for weekly consumption rate, alcohol type, or binge drinking.[8] These risks may seem modest, but they also suggest that prenatal alcohol exposure may well be the most common preventable cause of early pregnancy loss.

We must also recognize the risks of early alcohol consumption on later elements of care. O'Leary et al found that preterm birth was associated with moderate and higher levels of prenatal alcohol consumption, even for the group of women who ceased drinking before the second trimester.[9] In a 2007 study by Sokol et al, drinking twice per week in the first trimester increased the risk of preterm birth (i.e., at less than 32 weeks of gestation) by 4 times, a larger effect than from cocaine.[10]

Over 40,000 papers have been published on fetal alcohol exposure and outcomes in the offspring. *Fetal alcohol syndrome* (FAS) was first described in 1973,[11] although the adverse effects of alcohol on the developing fetus were suspected in antiquity.[12] Fetal alcohol syndrome has typically been associated with dysmorphic facial physical characteristics, prenatal and postnatal growth restriction, and developmental mental and emotional disorders associated with prenatal alcohol exposure during pregnancy.[13] A specific pattern of facial abnormalities includes small palpebral fissures, flat nasal bridge, thin upper lip, and smooth philtrum. Brain abnormalities (structural and functional) are also recognized.[14]

The physical abnormalities associated with full FAS make it easily recognizable, but a range of neurobehavioral impairments also associated with alcohol use during pregnancy may be more difficult to identify. Since that first description of FAS, developmental pediatricians have come to view FAS as one component of a range of alcohol-related disorders termed *fetal alcohol spectrum disorder* (FASD). Sokol et al provided a concise summary of FASD in 2003.[15] A more recent review of FASD may be found in a chapter written by Hoyme and Shah.[16] FASD diagnoses may range from FAS, with its associated physical and neurodevelopmental manifestations, to alcohol-related neurodevelopmental disorder (ARND), or to neurobehavioral disorder with prenatal alcohol exposure (ND-PAE). In a 2018 study of 6639 first graders in 4 regional communities in the United States, May et al found rates of FASD to be in the range of 11.3 to 50 per 1000 children.[17]

In 2013, May et al found that the infants of mothers whose alcohol consumption was limited to the first trimester of pregnancy were at a risk of detrimental neurobehavioral outcomes 12 times that of the infants of non-drinking mothers.[18] The risks associated with alcohol consumption that continued into the second and third trimesters were even higher—61 and 65 times that of non-drinking mothers, respectively. Ceasing to drink after the first trimester decreased risk to one-fifth that of those who did not cease alcohol consumption during the second and third trimesters. Those who find it especially difficult to cease consumption may have alcohol use disorder (AUD) and could benefit from referral for evaluation and treatment.

In their comprehensive review, Mattson et al point out that in any association between prenatal alcohol exposure and subsequent cognitive deficits, there are multiple confounding factors, including the pregnant person's age, body mass index (BMI), education, rural/urban residence, frequency/concentration of alcohol, and socioeconomic status.[19] Use of tobacco and other drugs can also be confounding variables; however, FASD does not occur without prenatal alcohol exposure.

What then, should we be telling these patients? The majority of infants born to mothers who drank prior to pregnancy awareness will not develop physical, mental, or behavioral patterns associated with alcohol

consumption. The best evidence from the literature suggests a risk of 1% to 5% without consideration of timing. By stopping alcohol consumption after identification of the pregnancy and maintaining abstinence through the rest of the pregnancy, the risk may be reduced further. While there is no safe period in pregnancy to drink, stopping alcohol use after learning of the pregnancy can improve outcomes because brain growth and development take place throughout the pregnancy.[20]

Finally, we believe our specialty should move to greater action:

1. A renewed focus must be placed on education for adolescents and adults on the importance of avoiding alcohol use during pregnancy, as well as during breastfeeding. Many people recognize the burden of prenatal exposure to opioids and other drugs on fetal and child development but overlook alcohol as the more common and most severe cause of developmental problems.
2. Our specialty needs to reemphasize pre-pregnancy counseling: "If you are trying to get pregnant, act as though you are already pregnant. If you would not drink alcohol during pregnancy, then do not drink when you are trying to become pregnant."
3. Most patients are inspired to bear and raise healthy children, and we should reinforce this motivation. We must recognize that there will be some patients who, despite such motivation, find it difficult or impossible to control alcohol consumption and should be offered and encouraged to pursue a referral for substance use treatment.
4. We need to identify substance use counseling and treatment programs in our community and support those resources.

Conflict of Interest:

The authors declare no conflict of interests.

Funding:

There was no source of funding utilized to create this document.

Acknowledgements:

None

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