

Substance misuse in pregnancy

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Abstract

The use of psychotropic substances during pregnancy has the potential to cause harm to the developing fetus. Each substance carries specific and often dose dependent effects. It is important to establish the type of substance used, the last time the substance was consumed, as well as the frequency and pattern of use. Care is best delivered through a multi-professional team with prompt interdisciplinary and inter-agency communication. Any co-existing physical or mental health needs should be addressed alongside the woman's substance misuse.

Post-delivery, the risk of opiate withdrawal for mother and baby is of concern. Longer term infant outcomes following the use of psychotropic drugs include cognitive impairment and developmental delay.

The combination of a hectic, unpredictable lifestyle, financial constraints and lack of support associated with substance misuse makes optimising care a real challenge. Neonatal and maternal outcomes can be optimised when women engage with maternity and drug and alcohol services.

Keywords addictive; alcohol-related disorders; behaviour; neonatal abstinence syndrome; pregnancy; street drugs; substance-related disorders

Introduction

The World Health Organisation (WHO) defines substance abuse as “*the harmful or hazardous use of psychoactive substances including alcohol and illicit drugs*”. It is particularly prevalent amongst young adults of reproductive age. Therefore, it is imperative that clinicians involved in women's health are equipped with appropriate knowledge and skills to manage the associated physical, psychological and social implications. In addition, pregnancy itself presents unique challenges with its rapidly changing pharmacokinetics, delicate homeostasis and two individuals to safeguard simultaneously.

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Even in low risk pregnancies positive outcomes cannot be assured, with a 10–20% miscarriage risk and 2–3% chance of congenital malformation. The use of psychotropic substances during pregnancy, prescribed or otherwise, has the potential to cause harm to the developing fetus, including teratogenesis, intrauterine growth restriction and developmental delay. It increases the risk of spontaneous miscarriage, preterm labour and intrauterine death and places the mother at higher risk of medical complications such as placental abruption and postpartum haemorrhage.

According to the 2015–16 Crime Survey for England and Wales almost 9% of adults age 16–59 had taken an illicit drug in the preceding year. This figure doubles to 18% amongst 16–24 year olds. Whilst these figures have fallen since the 2005–06 survey (from 10% to 25% respectively), drug-related hospital admissions are increasing (4% higher than in 2004–05) with drug-related deaths at their highest since 1993.

In the pregnant population, the 2016 MBRRACE-UK report revealed that over the last four trienniums drugs and alcohol were directly implicated in 2–2.8% of maternal deaths. Whilst not a huge figure, the preventable nature of these deaths, in addition to consequential life years lost dictate that its amelioration should remain a priority.

Considering the choice of substances used by women, cannabis remains the most commonly used illicit drug (3.8%), followed by cocaine (1.2%) and ecstasy (0.8%) and the numbers increase once tobacco and alcohol are considered.

In the 2014 Health and Social Care Information Centre survey, over 10% of women classify themselves as smokers at the time of delivery. From the 2016 MBRRACE-UK report, which showed that 20% of women who died from direct and indirect causes were smokers, it is evident that smokers are over-represented in the mortality data and hence pregnant smokers must be considered at increased risk of adverse outcomes.

As for the prevalence of gestational alcohol consumption, there is a broad drinking spectrum extending from the occasional drink to alcohol dependency. It is thought that 58% of the general adult population drink alcohol and around 5–10% of 16–44 year olds admit to alcohol consumption on more than 5 days of the week. However, pregnancy is a period of motivation and almost 50% of women said they cut down on their alcohol intake during pregnancy in their desire to implement positive health changes. This is why it is vital that healthcare professionals are proactive in encouraging pregnant women with an alcohol or drug problem to engage with appropriate services.

This review explores the physical impact of substance misuse on mother and baby as well as discussing evidence based management through the antenatal, intrapartum and postnatal periods. Additionally, it covers practical issues surrounding history taking, prescribing and some legal aspects of substance misuse to provide an informative guide to clinicians. Ultimately this review aims to empower care providers to adopt a holistic, multidisciplinary approach to ensure women, who are pregnant and misusing legal or illegal substances are receiving the best possible care.

Drugs and alcohol in pregnancy

Legal substances

Tobacco: smoking during pregnancy is associated with adverse outcomes, from conception, through the antenatal course and

even into the early months following delivery (Figure 1). Although cigarettes contain numerous poisonous chemicals, it is thought that the nicotine and carbon monoxide are likely to be responsible for most of the complications through decreasing the oxygen gradient for the fetus and impeding nutrient transfer.

Women who smoke throughout their pregnancy have the highest risk of intrauterine growth restriction with a dose dependent reduction in birth weight of 150–450 g compared with non-smokers. Consequently, the Royal College of Obstetricians and Gynaecologists recommends that women who smoke more than 11 cigarettes/day should have serial growth scans. It is good practice to test carbon monoxide levels at booking to help guide management and counsel on the likelihood of adverse outcomes.

The impact of smoking on breastfeeding is often underestimated, with over 50% of smokers reporting that smoking affected their breastfeeding decisions and 10% naming smoking as the reason why they stopped breastfeeding. Nicotine is transferred to breast milk in small amounts but it is accepted that the benefits of breastfeeding still outweigh potential risks.

Stopping smoking during pregnancy is the single biggest step a woman can take to benefit her and her baby. Whilst behavioural counselling and health education should be the mainstay of treatment, women may try nicotine replacement therapies (NRT). They should be warned that their efficacy and safety in pregnancy have not been proven. General conclusions within the literature are that NRT is likely to be less damaging than smoking and even if it facilitates a decrease in number of cigarettes smoked, may be beneficial. The woman should be informed of the risks and benefits and if trying NRT, it should be prescribed at the lowest possible therapeutic dose.

The recent development of electronic cigarettes has sparked concerns about their safety profile in pregnancy. Whilst in general their use is regarded as safer than cigarettes, a 2014 report by the WHO concluded that pregnant women should avoid electronic cigarettes as fetal exposure may have long term consequences on brain development.

Alcohol: with around 35% women consuming alcohol at some point during their pregnancy and the documented evidence of its harm, it is important to maintain awareness to help identify those at risk early and manage appropriately. The Department of Health

(2016) recommends that women should avoid drinking alcohol during pregnancy, to minimise risk to the fetus, as the only amount of alcohol that is safe to consume during pregnancy is none. A screening questionnaire such as 'AUDIT-C' may be useful in detecting those with 'at risk' drinking habits (Table 1).

Alcohol crosses the placenta and as the fetal liver is unable to metabolise alcohol efficiently, toxic and potentially teratogenic blood levels can ensue. The result is a range of clinical consequences grouped under the term Fetal Alcohol Spectrum Disorders, one of which is Fetal Alcohol Syndrome (FAS). FAS is characterised by a triad of abnormal facial features (short palpebral fissures, smooth philtrum), growth restriction, short stature, neurodevelopmental abnormalities and is a lifelong source of morbidity and mortality. As the exact amount of alcohol that can produce fetal harm has not yet been determined, the only guaranteed safe practise is abstinence.

AUDIT-C questionnaire

AUDIT – C (A score > 5 indicates potential risk)

Questions	Scoring system				
	0	1	2	3	4
How often do you have a drink containing alcohol?	Never	Monthly or less	2–4 times per month	2–3 times per week	4+ times per week
How many units of alcohol do you drink on a typical day if drinking?	0–2	3–4	5–6	7–9	10+
In the last year, on how many occasions have you had 6 or more units (female), 8 or more units (male)?	Never	Less than monthly	Monthly	Weekly	Almost Daily

Table 1

Effects of smoking by gestation/period

Trimester 1

- Increased risk of miscarriage
- Increased risk of ectopic pregnancy

Trimester 2

- Placenta praevia
- Placental abruption
- Preterm rupture of membranes
- IUGR/low birth weight
- Prematurity
- Fetal death in utero
- Decreased risk of pre-eclampsia

Trimester 3

Neonatal period

- SIDS
- Asthma
- Cognitive impairment
- Poor attachment
- Early cessation of breast feeding

Figure 1

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