

# DRUG USE AND PREGNANCY – CHALLENGES FOR PUBLIC HEALTH

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Problem drug use in pregnancy affects a sizeable population in Europe. A literature review was carried out of articles in PubMed, European Monitoring Centre for Drugs and Drug Addiction publications, and related documents in order to assess public health challenges and possible intervention strategies related to problem drug use and pregnancy in Europe. It revealed the following: Involving pregnant drug users in drug treatment is likely to decrease the chances of pre- and perinatal complications related to drug use and to increase access to prenatal care. Timely medical intervention can effectively prevent vertical transmission of human immunodeficiency virus, hepatitis B virus as well as certain other sexually transmitted diseases, and would allow newborns infected with hepatitis C virus during birth to receive immediate treatment. Pregnancy may be a unique opportunity to also help women with dual diagnosis (substance use combined with mental illness) and enrol them into special treatment and support programmes. Issues related to homelessness and intimate partner violence can also be addressed with appropriate interventions. Treatment and care for pregnant drug users should offer coordinated interventions in several areas: drug use, infectious diseases, mental health, personal and social welfare, and gynaecological/obstetric care.

### Background

Problem drug use (defined by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) as “injecting drug use or long duration/regular use of opioids, cocaine and/or amphetamines” [1]) and pregnancy affect a sizeable population in Europe. It is estimated that there are about 1.3-1.7 million problem opioid users in the European Union and Norway [2]. Furthermore, approximately 20% of drug users entering drug treatment and around 34% of opioid users are women (the great majority of whom are of childbearing age) [3], and every year, as many as 6.5-11% of female problem drug users may get pregnant or give birth [4,5]. This suggests that each year there may be as many as 30.000 pregnant women using opioids in Europe, and the number of pregnant women using drugs other than opioids may be equally high. The issue of pregnancy and drug use is important to address because of the associated personal and public health challenges regarding both the mother and the unborn child, especially regarding infections that are common among drug-using populations. In this article, we review some of these challenges: infection with blood-borne and sexually transmitted diseases (STIs, including infections with human immunodeficiency virus (HIV) and hepatitis C virus (HCV), dual diagnosis (substance use combined with mental illness), social and personal welfare and drug treatment,; and assess and summarise possible solutions to alleviate these challenges.

### Methods

A literature review of articles in PubMed published in or after 1990 was conducted using the keywords “pregnancy” and “drug use” / “substance abuse”, and specific keywords for each area of interest (e.g. “dual diagnosis”, “homeless” etc.). Articles discussing pregnancy and tobacco or alcohol use without the mention of other drugs were not considered. In addition, when articles were found that were especially relevant to this review, the “Related Articles for PubMed” links were also investigated. Furthermore, EMCDDA publications (annual reports, selected issues, statistical bulletin) with relevant information were included. When the original publication referenced other, non-PubMed or non-EMCDDA publications, those references were also included in this review. While our focus was on pregnant drug users in Europe, some non-European references were included when found relevant. In this paper, we use the terms “drug use” to refer to problem use of drugs other than alcohol or tobacco, and “pregnant drug users” to refer to pregnant women with problem use of drugs other than alcohol or tobacco.

### Pregnancy complications linked to drug use

Continued drug use during pregnancy may lead to complications for the foetus, for the newborn, and later during childhood [6,7]. Complications for the foetus include spontaneous abortion, restricted foetal growth, incorrect maternal placentation, compromised foetal well-being and pre-term delivery. The newborn can be affected by low birth weight, postnatal growth deficiency, microcephaly, neurobehavioral problems and drug withdrawal syndrome [8,9]. In addition, behavioural and cognitive problems may arise later in childhood, and children may be affected by the mother’s ongoing drug use [7].

### Drug treatment

Lack of appropriate obstetric and neonatal care has been associated with obstetric complications and with poor pregnancy outcomes among drug users [9-12]. Treatment of drug dependence of pregnant drug users therefore involves not only a stabilisation of their health and social situation as drug users, but also offers an opportunity for regular contact with health services, including standard pre-natal care [13]. It is thus important to improve pregnant drug users’ access to, and retention in, drug treatment. Since the 1970s, methadone maintenance has been recommended for opioid dependence in pregnancy [14], although some studies have shown that buprenorphine may offer an advantage over methadone with regard to lower intensity of neonatal abstinence syndrome [15-17]. New guidelines from the World Health Organization (WHO)

confirm the recommendation of agonist maintenance treatment for pregnant opioid users on the basis of the risks and poor outcomes associated with withdrawals [18]. However, the possibility of drug-drug interactions should be kept in mind, and dose adjustments of substitution treatment may be necessary in different stages of the pregnancy [19]. A recent systematic review of psychosocial interventions suggested that contingency management strategies are effective in improving retention of pregnant drug users in outpatient treatment, but failed to assess any effects on obstetrical and neonatal outcomes [20]. Evidence on the effects of home visits by nurses, counsellors or midwives to women with a drug problem is currently insufficient [21]. However, several decades of clinical management of pregnant drug users point to a need to consider the life circumstances of the individual women and apply a case management approach [9,10,13,14,17,19,22].

### Infectious diseases

Certain infectious diseases such as HIV, HBV, hepatitis C virus (HCV), and some other STIs, are more common among illicit drug users (especially those who inject) than among the rest of the population, and their early detection is essential to reduce the risk of vertical transmission [2,3]. The prevalence of infectious diseases is also high among pregnant women who use illicit drugs [23]. For example, in a sample of 259 pregnant women enrolled in drug treatment in France in 1998, 63,3% were infected with HCV, 8,9% with HBV, 6,2% with HIV and 1,5% with syphilis [24,25]. While policies vary across countries, standard antenatal care in most European countries today include voluntary screening for infections, which can include HIV, HCV, HBV, syphilis, and STIs such as chlamydia infection, in order to provide early diagnosis and appropriate treatment for the mother and to reduce the risk of mother-to-child transmission [26]. Still, many pregnant drug users, especially those who have infectious diseases that are common among drug users (such as HIV or HCV), may receive suboptimal prenatal care due to difficulties accessing prenatal services [24,27,28]. This is worrying, since strong evidence supports the importance of early diagnosis and the effectiveness of interventions aimed at HIV infected pregnant women, with the reduction of vertical transmission rates to under 1% [29,30].

The risk of vertical transmission of HCV during birth is highly variable depending on HCV RNA viraemia and HIV co-infection: It is below 10% in HIV-negative study populations (1-3% among HCV RNA-negative women and 4-6% among HCV RNA-positive women) and up to 41% in study populations in which about half of the women were also infected with HIV [31-35]. Co-infection with HCV and HIV is also associated with an increased risk of vertical HIV transmission [36,37]. In contrast to preventing HIV infection of the child, no safe and effective prevention method exists to prevent perinatal transmission of HCV [31,34,38]. As no viral RNA is present in the breast milk or colostrum of infected mothers, there is no evidence of transmission of HCV through breastfeeding [32,33]. However, HCV viraemia has been found to be associated with active injection drug use among HIV-HCV co-infected female drug users, perhaps due to re-infection or reactivation of HCV [39]. HCV transmission does not occur through breastfeeding but only during pregnancy or birth. The likelihood of transmission increases with the viral load, which is higher during active injecting drug use. Preventing, reducing or stopping injecting (e.g. through opioid substitution therapy) may therefore be a way to reduce the probability of vertical HCV transmission. In addition, antiviral therapy is indicated for HIV-HCV co-infected women past

the first trimester in order to reduce the risk of both HIV and HCV transmission [40].

Infection with HBV is also common among drug users [2]. The current recommendation to prevent the transmission of HBV from mother to child is to administer to the newborn a combination of anti-HBV immunoglobulin followed by three doses of HBV vaccine [41,42]. WHO recommends the global implementation of childhood hepatitis B vaccination [43]. Still, many European countries (Denmark, Finland, Iceland, Ireland, the Netherlands, Norway, Sweden, and the UK) provide immunisation only for at-risk populations, a practice that is debated due to the difficulty of identifying all at-risk individuals [43,44]. Other STIs are also common among pregnant drug users [45]. As bacterial STIs (e.g. syphilis, gonorrhoea, chlamydiosis) can readily be treated with antibiotics, which also prevent vertical transmission [46,47], screening for STIs and treatment of those who are infected are recommended for pregnant drug users.

### Psychiatric co-morbidity

Dual diagnosis, i.e. co-morbidity of substance abuse and mental illness, is common among both drug using and mentally ill populations [48]. In Europe, as many as 80% of clients enrolled in drug treatment report a mental health problem [2,49-52]. Psychiatric co-morbidity is complex because patients may suffer from more severe symptoms than people with only substance use or mental illness, they may not respond well to treatment, and, when in treatment, they may have higher rates of relapse and attrition [53,54]. While in the general population men report higher levels of drug use than women [55], women report higher rates of mental illnesses, especially depression and anxiety disorders [56]. However, levels of psychiatric co-morbidity among substance users seem to be similar in both sexes [57]. Little is known about pregnant women with a dual diagnosis. In a study in France, 22% of pregnant drug users in substitution treatment for opioid use reported moderate to severe psychiatric disorders, mostly depression, neuroticism and anxiety disorders [25]. Pregnant women suffering from psychiatric co-morbidity often report a history of emotional, physical and sexual abuse as well [57,58]. Pregnancy may be an opportunity of contact with care services for both conditions of co-morbidity. However, the fear of losing the custody of the child and the feeling of guilt about using drugs during pregnancy may often pose a barrier to seeking treatment [57]. Interventions among pregnant women with psychiatric co-morbidity should target the three problematic areas (mental health, drug related problems and pregnancy) in a co-ordinated and integrated way, taking into account the individual needs of these women [10,19,59].

### Social and personal welfare

Issues related to the social and personal welfare of pregnant drug users include, among other things, homelessness and intimate partner violence. Overall, about one in ten drug users entering treatment in Europe lives in unstable conditions or is homeless [3]. Homelessness and drug use in pregnant women are associated with problematic perinatal events [11,12], inadequate access to health care, social isolation, and psychosocial and physical problems [60]. Among female drug users, those who are homeless more often face difficulties obtaining public assistance, and are afflicted by greater social isolation, a lack of family and social networks, higher rates of emotional, physical and sexual abuse as well as under-nutrition, and they are more likely to engage in survival sex [60]. Some homeless female drug users may be able to discontinue the

use of those drugs on which they are not dependent, but they may maintain the use of their main drug (most often crack cocaine or heroin) [57]. Homeless pregnant drug users are less likely to seek drug treatment than domiciled pregnant drug users, and, when in treatment, they are less likely to maintain abstinence and are more likely to leave treatment prematurely [60].

Many women are victims of intimate partner violence [61,62]. When compared to women who have not experienced assault, pregnant women who have been assaulted were more likely to drink alcohol or use drugs [63,64]. In a perinatal substance abuse treatment clinic, many pregnant drug users reported being abused during their pregnancy: 41% reported emotional abuse, 20% physical abuse and 7% sexual abuse [65]. Abused pregnant drug users often report that emotional abuse is more disturbing than physical abuse, and many report being subject to both emotional and sexual abuse [64,65]. The abuser in most of the cases is the partner, ex-partner or someone closely related to the victim [65-67]. The risk of increasing drug or alcohol use increases after experiencing violence [63,65,67]. Intimate partner violence among pregnant drug users is responsible for health problems such as depression, post-traumatic stress disorder, chronic pain in different parts of the body (e.g. in the abdomen), gastrointestinal and gynaecological problems [63,65-67]. Clinics, including prenatal clinics and drug treatment centres, may be the most appropriate place for pregnant drug users to receive interventions in order to prevent recurring partner violence and abuse [62,68-70].

### Conclusions

Pregnant drug users are at a higher risk than pregnant women who do not use drugs of contracting blood-borne and sexually transmitted infections. In addition, they are also affected by a number of physical, mental and social health problems. Services geared towards the general population need to cater to pregnant drug users as well. Special services for problem drug users should use outreach methods to timely identify pregnant drug users not in contact with services and ensure referral and collaboration with pregnancy care givers, using integrated case management strategies. Treatment and care for pregnant drug users should offer coordinated, multidisciplinary interventions encompassing several areas: prevention, screening and treatment of infectious diseases; mental health; personal and social welfare; gynaecological/obstetric care; and drug use [20,21]. The aim of such treatment and care is to reduce risk through the integrated collaboration of obstetricians, addiction counsellors, social workers, general practitioners, and other health care specialists [71], and to link drug treatment with other interventions aimed to help pregnant drug users. In addition, to prevent parental neglect that may be the consequence of drug abuse, adequate parenting support services should be made available and easily accessible to pregnant drug users.

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