

PERSPECTIVE

Methadone versus buprenorphine for the treatment of opioid abuse in pregnancy: science and stigma

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Abstract

The past decade has seen an increase in rates of opioid abuse during pregnancy. This clinical challenge has been met with debate regarding whether or not illicit and prescription opioid-dependent individuals require different treatment approaches; whether detoxification is preferable to maintenance; and the efficacy of methadone versus buprenorphine as treatment options during pregnancy. The clinical recommendations resulting from these discussions are frequently influenced by the comparative stigma attached to heroin abuse and methadone maintenance versus prescription opioid abuse and maintenance treatment with buprenorphine. While some studies have suggested that a subset of individuals who abuse prescription opioids may have different characteristics than heroin users, there is currently no evidence to suggest that buprenorphine is better suited to treatment of prescription opioid abuse than methadone. Similarly, despite its perennial popularity, there is no evidence to recommend detoxification as an efficacious approach to treatment of opioid dependence during pregnancy. While increased access to treatment is important, particularly in rural areas, there are multiple medical and psychosocial reasons to recommend comprehensive substance abuse treatment for pregnant women suffering from substance use disorders rather than office-based provision of maintenance medication. Both methadone and buprenorphine are important treatment options for opioid abuse during pregnancy. Methadone may still remain the preferred treatment choice for some women who require higher doses for stabilization, have a higher risk of treatment discontinuation, or who have had unsuccessful treatment attempts with buprenorphine. As treatment providers, we should advocate to expand available treatment options for pregnant women in all States.

Keywords

Buprenorphine, methadone, opioid agonist therapy, opioids, pregnancy

History

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The abuse of prescription opioids has increased steadily over the past 15 years (1), contributing significantly to the emergence of illicit opiates as the fastest growing substance abuse problem in the United States today (2). Poignantly, rates of opioid abuse during pregnancy have also increased (3), igniting debates regarding the risks and benefits of medication-assisted treatment options during pregnancy. Much of the discussion centers around whether women abusing prescription opioids benefit from a substantially different treatment approach than that which is effective for women abusing heroin, tapering versus maintenance as clinical management approaches during pregnancy, and methadone versus buprenorphine as medication-assisted treatment choices.

We have been slow to respond to the prescription opioid abuse epidemic for a number of reasons. In large part this has been due to misrepresentation of the abuse liability of the earlier formulation of OxyContin, aggressive marketing

campaigns by prescription opioid manufacturers, and systemic gaps in post-marketing surveillance (4) that led to an undeterred expansion of prescription opioid abuse. An additional factor was an aura of acceptability that surrounds prescription opioids due to their legality and prescription by a medical professional, despite their similarities in chemical structure, mechanism of action, and abuse liability to illicit opiates, such as heroin. An estimated 2 million people now abuse opiates in the US (5), and unintentional deaths by prescription opioid overdose now surpass those caused by both heroin and cocaine combined (6). It should be clear by now that prescription opioids are neither inherently benign, nor automatically indicative of a less severe substance abuse problem than illicit substances. However, this assumption is frequently implicit in both public and professional conversations regarding prescription drug abuse during pregnancy.

Differences in methods of prescription opioid diversion by class and gender may exacerbate erroneous patient and provider perceptions of the presence or severity of a substance use disorder. Women may be more likely to rely on a doctor's prescription (doctor shopping) and sharing/trading pills with

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friends and/or family than men, who are more likely to access prescription opioids through drug dealers (1). Individuals with higher incomes are more likely to engage in doctor shopping to obtain prescription opioids than lower income individuals who rely more frequently on the use of dealers (1). The differences between these means of diversion in social perception, legality, and likelihood of detection can exacerbate inaccurate perceptions in both providers and the public, many of whom may have a substance use disorder. Women of higher socioeconomic status may be perceived as not having a substance use problem because their means of diversion are more socially acceptable and less subject to detection.

Similarly, regional differences in the type of opioids commonly abused may be less connected to addiction severity, than the relative availability of prescription medications versus illicit drugs in rural areas (7). Indeed there is evidence that prescription opioid abuse is a contributing factor to the national rise in heroin abuse rates, as well as the introduction of heroin into rural and suburban areas where previously unavailable (8). Approximately half of the young people using heroin today report initially using prescription opioids. Many report switching to heroin because it is cheaper and more readily available (9,10). The abuse of prescription drugs, both opiates and benzodiazepines, by individuals receiving treatment for heroin abuse is also well-documented, suggesting that there is considerable overlap in these drugs of abuse. While some studies have pointed to differences in demographics, treatment history, and treatment outcomes between prescription opioid and heroin users (11), there is not currently enough evidence to assume that individuals who abuse prescription opioids and those who abuse heroin are entirely distinct populations requiring substantially different treatment approaches. Clinical trials assigning prescription opioid and heroin users to either buprenorphine or methadone maintenance respectively by type of opioid abused, have demonstrated no impact on treatment effectiveness (11).

Contributing to the lack of clarity in the public, and sometimes professional, debate is a failure to differentiate between physical dependence on a medication and addiction, of which increased tolerance and withdrawal symptoms are only one dimension. More far reaching is the impact of the addiction on the individual's psychosocial functioning. In pregnant women, a substance use disorder may have long-term effects on her and her child's well-being through impairment of maternal-infant bonding, exacerbation of psychiatric symptoms, disrupted social support systems, and inhibition of educational and career prospects.

Evidence-based assessment should be conducted to assess functional impairment in life domains as a result of substance use to determine the presence of a substance use disorder and gauge its severity. While injection drug use poses additional health risks, the potential for impairment in multiple life domains is present with all opioids that are abused. Once assessment is completed, the American Society of Addiction Medicine guidelines for referring patients to the appropriate level of care would ideally be followed. Individuals who have become physically dependent upon a drug which they were prescribed might be successfully tapered from the drug in an outpatient setting. However, for those in whom a substance use disorder is present, detoxification has a remarkably low

success rate (12,13). Attempts to encourage detoxification are often fueled by the stigma that has been attached to methadone treatment, rather than realistic expectations of the effectiveness of this approach in addressing opioid dependence. When treating opioid-dependent pregnant women, the concern of neonatal abstinence syndrome in the infant often lends additional impetus to the arguments for detoxification. While it is costly to treat otherwise healthy infants who remain in the hospital for an extended period of time, the effects of NAS are transitory and represent a small risk compared to that posed by active opioid abuse during pregnancy. Comprehensive substance abuse treatment remains the standard of care for pregnant women.

Food and Drug Administration (FDA) approval of buprenorphine for the treatment of opioid dependence in 2002 marked an important new treatment option in the US. As a partial agonist medication, buprenorphine offers some important advantages over methadone in the form of an improved safety profile, an easier taper for adult patients (14), and a shorter duration of NAS treatment when required, in infants exposed to opioids *in utero* (15). Regulations allowing its provision in office-based versus clinic settings increase the accessibility of treatment for opioid-dependent individuals, particularly those in rural areas. As a newer medication, buprenorphine appears burdened less by the stigma that methadone maintenance has accumulated (16). Similar to methadone, buprenorphine effectively accomplishes the primary goals of medication-assisted treatment in pregnant women by reducing opioid use, improving pregnancy outcomes, and stabilizing maternal lifestyle (17). However, there are limitations. When flexible dosing is implemented, treatment with methadone may result in higher retention rates (18). For women who have developed a high physical tolerance for opioids, the ceiling effect of buprenorphine may preclude their comfortable stabilization, requiring the higher doses that methadone affords. Additionally, some patients report that they do not like the way they feel on buprenorphine, possibly contributing to the lower retention rates seen.

The context in which medication-assisted treatment is offered is also important. The expansion of access that office-based provision of buprenorphine could offer is critical, particularly in rural areas. However, if we recognize that addiction is more than physiological dependence, we must also provide comprehensive substance abuse treatment. The range of services and coordination of care required for effective treatment of substance use disorders during pregnancy is often more easily provided in a clinic setting. Rates of psychiatric co-morbidity and history of trauma in women with substance use disorders are high (19). If untreated, these symptoms increase psychological distress, impair psychosocial functioning, and reduce effectiveness of substance abuse treatment (20). The push toward integrated treatment is nowhere more critical than here.

Both methadone and buprenorphine have a place in the treatment of opioid dependence in pregnant women. For a number of reasons, methadone may still be the preferred treatment for some pregnant women. More research is still needed to better understand which patients will benefit most from each medication. However, our treatment

recommendations should be based on the preferences of the client and scientific evidence, rather than unsubstantiated prejudice against methadone maintenance or misperceptions about the severity of an addiction based on the type of opioid abused. The adverse effects of failed treatment attempts are far greater than the transitory effects of NAS, so care should be taken to maximize treatment efficacy for the pregnant woman. Stabilizing the maternal environment and providing a solid foundation for her recovery will bring long-lasting benefits to both mother and child. As helping professionals, it is incumbent upon us to advocate for expanded treatment options that achieve this goal.

Declaration of interest

The author reports no conflicts of interest. The author alone is responsible for the content and writing of this paper.

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