Screening and Management of Substance Use in Pregnancy: A Review

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Abstract

Substance use during pregnancy has important implications for health care providers, policy makers, and can negatively impact a woman's health and the health of her children. Understanding trends, patterns of use and outcomes are critical to prevention campaigns, building awareness, and providing effective care. This review will discuss the current therapeutic approaches and recommendations for screening and patient management for substance use in pregnancy and during the postpartum period, and it is geared towards any care providers who care for patients or those who may care for patients who may be at risk for substance use during pregnancy.

Résumé

La consommation de substances psychoactives pendant la grossesse est un facteur important dont doivent tenir compte les fournisseurs de soins de santé et les décideurs, car elle peut affecter la santé de la mère et de ses enfants. Il est essentiel de comprendre les tendances ainsi que les habitudes de consommation et leurs conséquences pour mettre sur pied des campagnes de prévention, sensibiliser la population et offrir des soins efficaces. Cette revue, qui aborde les approches thérapeutiques et les recommandations actuelles en matière de dépistage et de prise en charge de la consommation pendant et après la grossesse, s'adresse à tous les fournisseurs qui suivent ou pourraient suivre des patientes qui risquent de consommer pendant leur grossesse.

Key Words: Substance use, pregnancy, cannabis, hallucinogens, opioids, stimulants

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INTRODUCTION

Substance use during pregnancy is an important issue that can have significant and persistent adverse consequences for pregnant women and their babies. Pregnancy is a significant time of change for women, and for some, having contact with health care providers can lead them to make healthier choices. By providing information and support throughout pregnancy and in the early postpartum period, women may have the opportunity to access resources that can improve their health and the health of their newborn. The focus of this review is to provide an overview of the current literature related to the identification and screening for problematic substance use and to outline the management approaches and practices that can be used in the health care setting.

Recommendations for future work are also discussed.

METHODS

This review was formulated by the authors over a 12-month period through a comprehensive review of published and grey literature using the following search terms: "substance use"; "addiction"; "WHO" and "substance use"; "addiction" and "definition"; "substance use" and "public health"; "substance use" and "behaviour"; "addiction" and "withdrawal"; and "psychoactive substances."

Section headings were assigned to subgroups from the authorship committee and the content was developed by them. Final drafts were brought back to the authorship committee for discussion and revision. The content of this review is the result of a thorough review of the literature, in which all relevant articles were selected, reviewed, and synthesized by the authors, as well as the longstanding collective expertise of the authors.

IDENTIFICATION AND SCREENING

A number of methods have been developed to help to detect problematic substance use during pregnancy, including maternal interview, screening questionnaires, and toxicology testing of urine, hair, and/or meconium. Each of these methods has inherent strengths and weaknesses.

Maternal Interview/Self-Report Screening Questionnaires

Self-report screening questionnaires and maternal inquiry or natural inquiry have become a fundamental component of drug use detection during pregnancy, and some elements have been embedded in some provincial antenatal forms. However, it is important to recognize that there are also technological means (discussed below) that compliment these questionnaires, because all information cannot feasibly be collected via a questionnaire. Typically, the self-report questionnaires that have been well-validated for sensitivity and specificity and are used in the clinical setting are T-ACE (Tolerance, Annoyed, Cut down, Eye-opener);[1] TWEAK (Tolerance, Worried, Eye-openers, Amnesia, Kut down);[2] AUDIT (Alcohol Use Disorders Identification Test);[3] and the CAGE (Cut down, Annoyed, Guilty, Eye-Opener)[4] questionnaires.

Since 1994, the United States has been surveying its population as a means to assess the issue of substance use during pregnancy,[5] and specific questions related to this issue are included on the National Household Survey on Drug Abuse.[5] Despite this ongoing surveillance, self-report screening questionnaires have limitations and have been reported as an unreliable method of measuring substance use,[6] especially when individuals believe that their responses will have negative consequences.[7] Bessa et al.[8] compared self-reports of substance use to detection of substance use via hair analysis. They found that despite no reported substance use, hair analysis detected substance use in 12% of participants. Maternal self-report has also been compared to drug toxicology,[9] and data reveal that toxicology does not always identify users. It is important to recognize assay parameters and that not all substances will be detected if the time frame was outside of the detection window.

There are clinical markers that may be helpful to consider when screening for abuse. Care providers should note poor maternal nutrition, intrauterine growth restriction, and poor placental perfusion and function. In the case of alcohol abuse, the possibility of fetal alcohol spectrum disorder; the diagnosis given to individuals who were exposed prenatally to alcohol characterized predominantly by pervasive neurodevelopmental abnormalities, must be considered.[10] Placental abruption and stillbirth are important additional considerations in the event of cocaine abuse.[11] Pregnant women with opioid addictions tend to seek prenatal care late in pregnancy (or not at all, arriving at the emergency department already in labour); miss their appointments; experience poor weight gain; or exhibit signs of sedation, intoxication, or erratic behaviour. Upon physical examination by the physician, signs of opioid use might include track marks from intravenous injection, lesions from subcutaneous injections ("skin popping"), abscesses, or cellulitis. Positive results of blood tests for HIV or hepatitis can also indicate substance abuse.[12,13]

Clinicians should observe pregnant cocaine users for hypertension, hyperthermia (greatly increased body temperature), abdominal pain, and increased heart rate—and in the case of heavy cocaine use, arrhythmias, myocardial infarction, respiratory failure, stroke, and seizures.[14] Hyperthermia mediated by vasoconstriction (constricted blood vessels) or the hypermetabolic state of cocaine use may also be observed; this should be considered an effect that might counteract the expected physiologic vasodilatation (and normal lowering of blood pressure) from increased levels of progesterone. Hyperthermia from multiple causes (including pyelonephritis and other infections) has been linked with prematurity, low birth weight, and in rare cases, fetal

ABBREVIATIONS

BI	brief interventions
FASD	fetal alcohol spectrum disorder
NAS	neonatal abstinence syndrome
NRD	nicotine replacement therapy
OAT	opioid agonist treatment

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