

Perinatal Drug Abuse and Adverse Neonatal Outcomes

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Substance abuse is a crucial problem that the modern society is facing globally. Perinatal substance abuse is increasing worldwide leading to many adverse maternal, fetal and neonatal effects. Among the adverse birth outcomes, fetal growth retardation, developmental/behavioral abnormalities, low birth weight and mental retardation are mostly linked to perinatal substance abuse^[1,2].

There is a wide variation in the rates of substance abuse during pregnancy based on the ethnicity and race of women. Epidemiological data reveals that the rate of substance abuse is high among African American women and the rates are lower among Asian women. Tobacco and alcohol are reported to be the most common substances used by pregnant women while cannabis is majorly the illicit substance found in use among pregnant women. Other major maternal drugs often involved in abuse include opioids, cocaine, amphetamines and methamphetamines. It is estimated that the neonatal exposure to alcohol and illicit drugs before delivery is about 11%.

Drug abuse during pregnancy leads to a variety of complications such as early pregnancy loss, premature detachment of the placenta from the wall of the uterus; amnionitis, intrauterine growth restriction, late intrauterine death, placental insufficiency, pre eclampsia, eclampsia, septic thrombophlebitis, generalized edema, weight gain, proteinuria, severe headache and visual disturbances and premature labour. Concurrent mental health problems, such as depression, anxiety, Post-Traumatic Stress Disorder (PTSD) and panic disorder are also prevalent

among women with perinatal substance abuse. Pregnant women are vulnerable to tremendous emotional changes, exacerbating pre-existing psychiatric conditions. Co-existing psychiatric disorders and substance abuse can contribute to long term negative maternal and fetal health outcomes^[3,4].

Most of the perinatal complications appear in a dose dependent manner. It is often difficult to recognize substance abuse during pregnancy since the clinical features are mostly subtle, and pregnant women involved in drug abuse may fail to seek prenatal care from fear of stigmatization and discrimination^[1,5].

Opioids are some of the most common drugs taken during pregnancy. Incidence of opioid abuse has been increasing at an alarming rate, especially among teens and young adults. Research has also shown that addiction towards opioids such as heroin have a fast progression in women leading to severe neurological consequences such as impairing the brain function, memory and verbal fluency which affects the person's ability to care for the newborn. Prolonged fetal exposure to opioids also leads to neonatal abstinence syndrome characterized by multi-system involvement including the central, autonomic nervous system also affecting gastrointestinal tract^[4,5,6].

Cocaine use during pregnancy is associated with many adverse outcomes. Data suggests that cocaine use is associated with increased rate of spontaneous abortions, Sudden Infant Death Syndrome (SIDS) in up to 38% of early pregnancies as it

increases the maternal plasma norepinephrine levels leading to increased uterine contractility and poor fetal oxygenation. The incidence of stillbirths among women with a history of cocaine abuse is also higher as cocaine causes placental abruption.

Fetal Alcohol Syndrome (FAS) affects 2-5 of every 100 newborns and is mostly characterized by craniofacial dysmorphism, growth retardation, central nervous system and cardiac abnormalities occurring due to heavy drinking among pregnant women. Smoking during pregnancy is the most common cause of low birth weight deliveries as nicotine concentrates in the fetal blood leading to fetal hypoxemia^[3,5,7].

A great proportion of women with drug abuse problems are also victims of physical and sexual assault. Such victimization has been associated with various mental health consequences such as depression, suicide and low self-esteem further posing challenges to neonatal care^[4].

Perinatal drug abuse and dependence presents a variety of substantial challenges for the health care system. A comprehensive multidisciplinary treatment approach combining a variety of services including medical, psychosocial support, child care services and obstetrical care should be provided to pregnant women involved in substance abuse.

Supervised medication-assisted treatment is an effective component of a comprehensive treatment plan for pregnant women who abuse drugs. The adverse outcomes of perinatal substance abuse could be reduced by adequate counseling on family planning and substance use among all women of reproductive age. Timely neonatal interventions can reduce or pre-

vent the neurological and long term developmental problems, associated with substance abuse during pregnancy. Supervised medication-assisted treatment has also demonstrated positive outcomes reducing the fetal and maternal complications. Addressing the magnitude of the problem and creating increased awareness of substance abuse during pregnancy amidst the medical community is required in order to help alleviate the growing incidence of perinatal drug abuse.

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