



# Maternal and Neonatal Effects of Substance Abuse During Pregnancy: A Case Report

## Gebelik Sırasında Madde Bağımlılığının Maternal ve Neonatal Etkileri: Bir Olgu Sunumu

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### Abstract

Substance abuse in pregnancy is associated with increased maternal and fetal morbidity. Pregnant heroin users are offered a multidisciplinary, nonjudgmental approach by a dedicated team which includes obstetricians, pediatricians, midwives, and social workers. Here, we describe a 28 weeks pregnant woman with a 5-year history of heroin abuse resulting in premature delivery. (*The Medical Bulletin of Haseki 2013; 51: 76-8*)

**Key Words:** Drug abuse, heroin, methadone, multidisciplinary, pregnancy

### Özet

Gebelikte madde kullanımı artmış maternal ve fetal morbidite ile birliktedir. Tüm madde kullanan gebeler obstetrisyen, pediatrist, sosyal hizmet çalışanlarının olduğu bir ekiple multidisipliner olarak yönetilmelidir. Biz yazımızda 28 hafta, 5 yıldır eroin kullanım öyküsü olan ve erken doğumla sonuçlanan bir gebelik vakasını olgu olarak sunduk. (*Haseki Tıp Bülteni 2013; 51: 76-8*)

**Anahtar Kelimeler:** Madde bağımlılığı, Eroin, Metadon, Multidisipliner, Gebelik

### Introduction

Substance abuse is a worldwide public health problem. Heroin use is common among drug users and it is usually injected intravenously. Heroin use during pregnancy is associated with an increased risk of perinatal mortality, preterm delivery and low birth weight (1). Obstetricians and neonatologists are confronting the effects of drugs on their patients. Pregnant heroin users are offered a multidisciplinary, nonjudgmental approach by a dedicated team which includes obstetricians, pediatricians, midwives, and social workers. Here, we describe a 37-year-old 28 weeks pregnant woman with a 5-year history of heroin abuse resulting in premature delivery.

### Case

Our case was a 37-year-old woman who had 28 week of pregnancy. At initial assessment, she reported a 5-year history of heroin abuse. She was receiving approximately 2gr of heroin intravenously daily and the last injection was 5 days ago. She admitted to our emergency department at the 28<sup>th</sup> week of her pregnancy with withdrawal symptoms

and labor pain. Abdominal examination revealed a singleton fetus in non-vertex presentation. The uterine fundal height corresponded to 28 weeks gestation. Ultrasound confirmed an estimated fetal weight of 1500gr; fetal monitoring demonstrated uterine contractions. Fetal heart rate was 140 b.p.m. Vaginal examination showed no dilation or effacement. On physical examination, she had a heart rate of 74 beats /min and respiratory rate of 20 breaths/min and blood pressure of 128/74 mm Hg in the right arm in supine position and all peripheral pulses were palpable. There were no signs of external injury, but multiple puncture marks were seen in both antecubital fossae. Examination of the chest and cardiovascular system were unremarkable. Neurological examination showed normal higher mental functions and cranial nerves. Initial blood investigations were as follows: hemoglobin: 13.6 g/dL, total leukocyte: 20.2003/mm, blood urea: 106 mg/dL, serum creatinine: 3.49 mg/dL, sodium: 133 meq/L, potassium: 2 meq/L, calcium: 7.8 mg/dL. She had elevated serum aspartate aminotransferase (SGOT) of 464 U/L, alanine aminotransferase (SGPT) of 285 U/L, lactate dehydrogenase (LDH) of 750 U/L and serum

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**Table 1.** Trends of laboratory parameters with time

	Day 1	Day 2	Day 6
CPK(U/L)	2519	2329	65
LDH(U/L)	750	610	286
SGOT(U/L)	464	136	28
SGPT(U/L)	285	128	45
UREA	106	113	72
CREATININ	3.49	4,29	1,48

CPK: creatine phosphokinase, LDH: lactate dehydrogenase, SGOT: serum glutamate oxaloacetate transaminase, SGPT: serum glutamate pyruvate transaminase

creatinine phosphokinase (CPK) of 2519 U/L, indicating all parameters were significantly elevated. Blood gas analysis showed the following: pH: 7.33, bicarbonate: 40.7 meq/L, PCO<sub>2</sub>: 98.8 mmHg and oxygen saturation: 39.5% on room air. Further investigations showed normal prothrombin and activated partial thromboplastin time. Serology for human immunodeficiency virus (HIV) and hepatitis B surface antigen were negative but anti-hepatitis C virus surface antigen was positive. The patient was evaluated with multidisciplinary approach, her blood electrolyte imbalance was treated urgently by anesthesiologists. During the follow-up, uterine contractions increased, cervical dilation progressed and pregnancy was terminated by cesarean section. 1350 gram baby was born with Apgar scores of 6 and 7 at 1 and 5 min, respectively. Further examination showed no signs of neonatal abstinences syndrome (NAS). They were kept in the hospital for six days and, by six days, her CPK, LDH, SGOT levels became normal (Table 1). Her postoperative period was uneventful and she was discharged home on the 7<sup>th</sup> day.

## Discussion

Substance abuse is a worldwide public health issue. The prevalence of substance use in Turkey has been reported to be 6.4% (2). The problems are further complicated by the associated legal, social and environmental problems, which can interfere with both care provision and the ability of the mother to care for her child after delivery. Drug-using women have high-risk pregnancies per se, and therefore, warrant relatively intensive monitoring. The popular belief is that opiate use in pregnancy is associated with significant maternal and perinatal mortality and morbidity; one of them is preterm delivery. Preterm delivery is more common in pregnant addicts, with drug abuse entailing a relative risk of 3.45 (3). Inadequate numbers of antenatal care and clinical examinations due to poor care increased the prevalence of premature deliveries. Our case had never been examined by an obstetrician before and she had a history of inadequate antenatal care. Significant numbers of babies who are

exposed to opiates in pregnancy have signs of withdrawal in the neonatal periods and this situation named neonatal abstinence syndrome (NAS) (4). Clinical features of neonatal opiate-abstinence syndrome include neurologic excitability, gastrointestinal dysfunction, and autonomic nervous system dysregulation. In contrast to the literature, in our case, there were no clinical signs of withdrawal in the baby. Pediatricians are the most important part of the management of these patients. All clinicians should be vigilant and training programs should include approach to addicted mother's babies. The use of neonatal assessment charts help standardize the assessment of NAS.

Rhabdomyolysis and acute kidney injury have been reported as a complication of heroin addiction and overdose (5). Rhabdomyolysis is the likely cause of renal failure. Due to rhabdomyolysis and acute kidney injury, blood urea, serum creatinine and CPK levels were elevated in our case. On the other hand, heroin has hepatotoxic effect and, as seen in our case, it causes elevated serum aminotransferases.

In addition to mothers, babies and health care workers are at increased risk of bloodborne infectious diseases such as hepatitis B, hepatitis C and HIV. Seropositivity rate of hepatitis B surface antigen is 2.7% and anti hepatitis C surface antigen is 1-1.2% in Turkey (6). However, among them, the number of drug users is unknown.

Heroin exposure can cause various neurological complications (7). In our case, there was no neurological component and her neurological examination was completely normal. There are also concerns that higher doses of opiates are required for analgesia. For this reason, we preferred regional anesthesia. Contraception is an important factor in postnatal care. Understandably, many women do not regard this as a priority, especially when their baby is in the special care unit. Breast-feeding in drug-using mothers is controversial, particularly in opiate users. Most would not advise breastfeeding if the woman continues to use heroin; if she is injecting, breastfeeding is contraindicated because of the potential HIV risk. Specific

problems in the puerperium will depend on the drug used, but in all cases, symptoms of maternal withdrawal must be watched for. Ideally, mother and baby should be cared for together in a transitional care unit, although in centers where this is not possible, babies may need to stay in the special care baby unit.

Long-term follow-up of this group of women is not easy, but the aim should be to continue care beyond delivery. The ideal scenario is that mother and baby remain together with an adequate and appropriate support, although at present, resources do not always facilitate this. The treatment of drug addiction must include a good deal of social integration and changes in their life style. As we described before, treatment of these cases have to be multidisciplinary. Social workers are the most important part of the management. In our hospital, this service is given by psychiatrists who visited her regularly. In our hospital, we have alcohol and substance abuse treatment center named AMATEM. We referred our case to this center after discharge. However, since there are no such facilities, it is not possible in all centers in Turkey, for example in the Eastern and Southeastern Anatolia regions.

In recent years, migration and population growth in large cities caused many economic and social problems in Turkey. Social services and assistance are not sufficiently provided

due to migration, urbanization, family structure changes, and population growth. In Turkey, the most important problems faced by dependents is to reintegrate into society.

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