

Methadone-Aided Opium Detoxification in a 2.5 Year-Old Girl

Reza Bidaki, MD^{**}, Mahsa Sedaghati, MS^{**}
 Mitra Hakim Shoshtari, MD^{***}, Hamidreza Ahmadkhniha, MD^{***}

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Detoxification of children who are born from substance dependent mothers or those who are substance dependent themselves as a result of being abused by their families is a major concern. This report describes withdrawal symptoms and the way of abstinence in a 2.5 year-old girl who was dependent to opium. After that she was given opium for nearly two years suppress withdrawal symptoms, methadone-aided opium detoxification started for her and after 65 days she left the hospital with no symptoms of withdrawal syndrome.

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Introduction

Opiate withdrawal should be considered in children of addicted parents specially those who are born from substance dependent mothers. Initial treatment of drug withdrawal should be primarily supportive.

The most common practice is to taper the opium slowly under careful monitoring (1). Monotherapy with paregoric has been successful in 21(91%) of 23 infants, where as phenobarbital has been successful in 9(45%) of 20 (loading) and 8(50%) of 16 (titrated). Diazepam has never been successful as a single agent (4).

Clonidine or herbal adjuvant prescription and applying acupuncture are other feasible methods of detoxification (2). Treatment of neonatal withdrawal syndrome with clonidine in omission of opiates is also possible without causing short-term adverse cardiovascular

effects (5). Symptomatic treatment of opium withdrawal (e.g. antidiarrheal, antacid, bismuth, sedative and hypnotic agents) is also common (3).

Opium tincture (10 mg/mL) is preferred to paregoric for treatment of abstinence syndrome. Because of the danger of mistaking opium tincture for paregoric, opium tincture is best dispensed to the nursery in a dilution that contains a concentration of morphine equivalent to the concentration in paregoric (4).

Methadone has been used for treatment of iatrogenic narcotic dependency in pediatric intensive care unit patients. Initial doses of 0.05 to 0.1 mg/kg/6 hours maybe given, with increases of 0.05 mg/kg given until withdrawal symptoms are controlled. After these symptoms are controlled, methadone may be given every 12 to 24 hours and discontinued after weaning to doses of 0.05 mg/kg per day. After discontinuation, a continued slow fall in plasma concentration will occur because of the long half-life (26 hours) of methadone (6). So tapering off methadone is very difficult.

We used methadone for treatment of indigenous opium dependence in a child successfully.

Case Report

The patient was a 2.5 year-old girl who

Authors' affiliations : * Department of Psychiatry, Rafsanjan University of Medical Sciences, Rafsanjan, Iran **School of Medicine, Tehran University of Medical Sciences, Tehran, Iran *** Department of Psychiatry, Tehran University of Medical Sciences, Tehran, Iran ,

• **Corresponding author :** Reza Bidaki, Assistant professor of Rafsanjan University of Medical Sciences. Address : Moradi Hospital, Rafsanjan, Iran.
 Tel : + 98 3915230080 & + 98 3915230084
 Fax : +98 3915225800
 E-mail: Reza.Bidaki222@gmail.com

was born from a mother addicted to heroin who used heroin 6 grams/ day during pregnancy. Our patient had breast feeding for 3 months and during this period she did not have any problems. After stopping breast feeding she became agitated and nagged and cried frequently. Besides, cyanosis, stridor and dyspnea were noticeable due to drug abstinence. Her family gave her opiate soluted in water. This continued up to 2.5 year-old of age. When she was referred, she consumed opium 0.5 gr/day.

Her father was opium dependent for 17 years and her mother was substance abuser for about 8 years. Her mother did not want to be pregnant for a long time but after a while she gave birth to an addicted child who was detoxified by opium smoke.

Oppositional behaviors and reactive attachment disorder were formed as a result of social and emotional exclusions.

At the beginning of methadone-aided opium detoxification she was hospitalized in ICU to have access to essential facilities for resuscitation, if her vital signs changed dramatically. Her treatment was started with methadone tablet (20 mg) which was converted to a solution with water (0.05-0.1 mg/kg) four times a day (weight= 14kg, height= 70cm) (7). The dose was increased (0.05 mg/kg) to control the withdrawal symptoms (8,9). After controlling the symptoms, drug was given 2 times a day and then daily.

The dose was decreased 10% every 3-4 days. She did not show any clear withdrawal symptoms during tapering the drug. Sometimes she cried, was agitated and had insomnia and bone pain. To control the bone pain, syrup was given three times a day. Clonazepam (0.5 mg/day at night) for insomnia and agitation and dicyclomine (3mg/TDS) for diarrhea were prescribed (10).

Phenobarbital (100 ml, stat, IV) was given to prevent the generalized seizure which might be induced due to opium withdrawal (11-14).

Finally, she was discharged after about 65 days with no symptoms of withdrawal. During her hospitalization she had acceptable tolerance to the hospital environment. Her

methadone was stopped when she was going to the house.

It might be taken into account that her older sister (8 years old) has been detoxified by her family and by the method of tapering. Their action was successful because her mother was at the beginning period of addiction and her drug consumption was not much.

Another time and in another general hospital, she was detoxified by Phenobarbital. At that time her vital signs changed dramatically and she was discharged from the hospital with parents' willingness and was referred to this centre.

Discussion

In a previous study patients received clonidine and chloral hydrate versus morphine and phenobarbital for abstinence syndrome. The duration of treatment was significantly shorter in the clonidine/chloral hydrate group. Period of hospitalization was also considerably shorter in them and their withdrawal symptoms exhibited a markedly reduction (5).

Supportive care includes frequent small feedings of hypercaloric (24 cal/oz) formula to supply the additional caloric requirements; and observation of sleeping habits, temperature stability and weight gain (4).

In a randomized study, paregoric (0.2 mL/kg every 3 hours, increased as needed by 0.05 mL) was superior to phenobarbital (5 mg/kg/day intramuscularly every 8hours, increased as needed by 1 mg/kg/day) (15). Methadone only has been used to treat opioid withdrawal in a small number of children (6).

Unfortunately, opium tincture, paregoric and methadone syrup was not available in Iran at that time too. Thus, we obligatory used solution of methadone tablet in water.

Sometimes a mild increase was seen in her blood pressure and pulse rate but they were not critical and bothering. Agitation was the only problem she encountered with. No significant mood changes were detected. Her appetite and defecation pattern were desirable. However, she needed follow up and

strong social and family support after being discharged.

We faced serious problems in starting and continuing the therapy because of emotional and social problems of her family, their low socio-economic level, their demanding and interfering personality and lacking of guideline on treatment of these patients.

Prognosis opium withdrawal syndrome highly depends on the family situation and support after discharging from the hospital. As previously noted, her father was unemployed, suffering from cluster B personality disorder and positive history of opium dependence. Her mother had also cluster B personality disorder, substance dependence, low education and socio-economic level, low responsibility and extra-marital relationship. All of these problems would affect the recovery of child negatively.

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References

1. Jaffe JH, Epstein S, Ciraulo DA. Opioids. In: Ciraulo DA, Shader RI, editors. *Clinical, Manual of Chemical Dependence*. Washington, DC. American Psychiatric Press, Inc 1991: p 95-133.
2. Mokri A. Brief overview of the status of drug abuse in Iran. *Arch Iran Med* 2002; 5(3): 184-90.
3. 3. *Clinical Detoxification Protocols*. 2008 [cited 2008 July 15]; Available from: URL:<http://www.readytotest.com>
4. American Academy of Pediatrics: Neonatal Drug Withdrawal. *PEDIATRICS* 1998; 101(6): 1079-1088.
5. Esmaeili A, Keinhorst AK, Schuster T, Beske F, Schlosser R, Bastanier C. Treatment of neonatal abstinence syndrome

- with clonidine and chloral hydrate. *Acta Paediatr*. Feb 2010; 99(2): 209-14.
6. Joseph D, Tobias JD, Chares L, Schleien CL, Steve E, Haun SE. Methadone as treatment for iatrogenic narcotic dependency in pediatric intensive care unit patients. *Crit Care Med* 1990; 18: 1292-1293.
7. Rosen TS, Pippeng CE. Disposition of methadone and its relationship to severity of withdrawal in the newborn. *Addict Dis* 1975; 2(1-2): 169-78.
8. Osborn DA; Jeffery HE; Cole M. Opiate treatment for opiate withdrawal in newborn infants. *Cochrane Database Syst Rev* 2005; 20(3): CD002059.
9. Sarkar S, Donn SM. Management of neonatal abstinence syndrome in neonatal intensive care units: a national survey. *J Perinatol*. 2006; 26(1): 15-7.
10. Osborn DA, Jeffery HE, Cole MJ. Sedatives for opiate withdrawal in newborn infants. *Cochrane Database Syst Rev* 2002; 20(3): CD002053.
11. D'Apolito K. Neonatal Opiate Withdrawal: Pharmacologic Management. *Newborn and Infant Nursing Reviews* 2009; 9(1): 62-69.
12. Sadock BJ, Sadock VA. Substance-related disorders, Problems related to abuse or neglect. Other disorders of infancy childhood, and adolescence. *Synopsis of Psychiatry Behavioral Sciences/Clinical Psychiatry*. Philadelphia: Lippincott Williams; 2007. P. 381-66, 874-86, 1250.
13. Jaffe J.H, Strain E.C. Opioid related disorders. Nail W. Boris MD. Charls H. Zeanah. JR, MD, Reactive attachment disorder of infancy and early childhood; 2007. p.229.
14. Sadock BJ, Sadock VA, editors. *kaplan and Sadock`scomprehensive textbook of Philadelphia: Lippincott Williams; 2005. Vol 2. p 1265-90, 3248-53.*
15. Kandall SR, Doberczak TM, Mauer KR, Strashum RH, Korts DC. Opiate vs CNS depressant therapy in neonatal drug abstinence syndrome. *Am J Dis Child*. 1983; 137(4): 378-382.