

# Opium as a Fatal Substance

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## ABSTRACT

**Objective.** Poisoning does the most serious damages in pediatrics. In the northeast of Iran (Golestan province), opium is used widely for symptomatic therapy of routine illnesses in young children by parents. In the present study, opium toxicity was assessed in young children referred to pediatric centers in our area.

**Methods.** This survey was done as a prospective cross-sectional study. At first, a pilot study was undertaken to estimate the condition of opium intoxicated children and evaluate the validity of questionnaire. We collected data in collaboration with committee of Adverse Drug Reactions (ADR) in Golestan Province. All members of ADR committee in pediatric centers were trained to complete questionnaires in referred or admitted children under-5-year. Data was entered into computer and analyzed by Chi-square and Fisher exact test.

**Results.** In this survey, 67 opium-intoxicated children were recruited. Minimum age of the cases was 6 days and maximum 5-year. Uneducated mothers, in most cases, gave opium to the child. Most of them were from the low socio-economic level. Ethnic was disparity was observed. Four deaths occurred.

**Conclusion.** As the results showed, opioids are dangerous in pediatric population, especially under 5-year. Respiratory depression, bradypnea, coma and death are the serious outcomes of opium toxicity in pediatrics. Such a practice of unrestricted use of opium contributes to children mortality and so it is essential to launch educational programs. [Indian J Pediatr 2008; 75 (11) : 1125-1128] E-mail: s\_besharat\_gp@yahoo.com

**Key words :** Opium; Poisoning; Children

The number of children admitted for opium poisoning in children's medical center has increased, due to increase in number of opium addiction in the society.<sup>1,2</sup> Ingestion of opioid analgesics by children can lead to poor outcome due to respiratory failure and central nervous system depression. Opium is responsible for upto half of poisoning cases and 91% of deaths among drug-intoxicated children in Iran in some regions.<sup>3</sup>

Traditional use of opium for relieving pain or calming down a sick child is very common in Golestan province-Northeastern of Iran, which has a multiple ethnicity. Opium is grown mainly in Afghanistan, east of Iran. According to the UNO World Drug Report 2006, Afghanistan alone produces 89% of the world's illicit opium<sup>4</sup> and Iran is one of important route of opium transit.

This neighborhood induced a great health and socioeconomic problem in Iran. Parents' unawareness and low socioeconomic conditions are among the major etiologies in this problem. Authors designed the present study to detect the major causes, signs and symptoms in opium intoxicated children under 5-year.

## MATERIALS AND METHODS

This survey was conducted as a prospective cross-sectional study during 6 months from September 2006 upto February 2007. At first, a pilot study was done in Gorgan city, the capital city of Golestan province (Northeast of Iran) to estimate the rate of opium intoxication in children and evaluate the validity of questionnaire.

Children who were admitted to the University Hospitals in Golestan Province-Northeast of Iran, and with suspicion to opium overdose were included in the present study. Opium overdosed cases were treated immediately with naloxone (opioid antidote), oxygen, intravenous fluids, hydrocortisone and other medicines

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for symptomatic treatment.

A comprehensive checklist contained data about opium-poisoned cases and demographic information completed for each child. Blood and urine examinations were done for each patient.

As other reports showed before, in this area, the self-reported use of opium can provide a reliable and valid measurement.<sup>5</sup> Thus, we relied on the reports of parents (about amount of the opium usage and other data) but some questions were left without answer, due to the lack of parent's awareness. Sixty-seven cases were recruited. Most of the children were referred in October (2006) and the least were in February (2007). We collected data in collaboration with committee of Adverse Drug Reactions (ADR) in Golestan Province. Data were analyzed by relevant statistical tests; where applicable, the chi-square and Fisher exact test were used to determine statistical significance and P-value less than 0.05 was considered significant.

## RESULTS

Minimum age of these 67 children was 6 days and maximum was 5 year. The mean weight was 7.06 kg. Male to female ratio was almost equal and no significant age difference was seen between two genders (P value > 0.05). There were 25 cases (37.9%) urban residents and rural residents 41(61.2%). 26 (40.6%) were the first child of the family. Parents' educational levels are shown in table 1.

Most of the mothers (93.9%) were household drives and more than the half of the fathers (53.0%) were

TABLE 1. Parents Educational Levels in Children Intoxicated with Opium

Educational Level	Mothers		Fathers	
	N	%	N	%
Illiterate	27	41.5	22	33.8
Under diploma (under graduated)	25	38.5	33	50.8
Graduated from high school or college	13	20	10	15.3
Total	65	100	65	100

TABLE 2. Distribution of Demographic Data of Children Intoxicated with Opium

Age (yrs)	No.	Administrator						
		Gender		Oral (N)	Route of Intoxication			
		Male (N)	Female (N)		Inhalation (N)	Other routes or Accidental (N)	Mother (N)	Others (N)
<1	49	27	22	35	7	8	19	30
1-3	10	6	4	10	0	3	5	5
>3	8	5	3	7	0	10	2	6
Total	67	38	29	52	7	21	26	41

workers. Addiction to opium was also very common among parents and grandparents. Most of the subjects (72.3%) had an addict person in the family. Mostly fathers or grandfathers were the addict.

Opium was either given in the raw form or combined with local herbs, honey, tea, water and mother's milk or cow milk. The common type of opium was (the pure type of opium) *teriak* 63.6% (N=42), burned type (*Sukhte*) 24.2% (N=16) and opium extract (*Shireh*) 12.1% (N=8). The gender of the child and the way of using opium had significant relationship (P value<0.05). Some demographic features of the cases are shown in table 2.

Among the poisoned children, there were more Persians (N=26) than other ethnicities. Persian used burned opium more (48.1%) but other ethnicities (Turkmen, Sistani and others) used more *teriak* (90.0%, 81.3% and 100%) (P value<0.05). The most common clinical presentation was reduced consciousness and coma 30.3% (N=20), followed by cyanosis, restlessness and meiosis in 18.2% (N=12), respiratory depression in 10.6% (N=7). Drowsiness and convulsions were also common.

Reasons mentioned for the usage of opium were : diarrhea (48.3%), acute respiratory infection (8.3%), agitation (23.3%), insomnia (1.7%) and other reasons (16.7%).

The persons responsible for giving opium or advising it were mothers, elder women living in the same house, other relatives and neighbors. It was seen that most of the cases were given opium their mothers (N=26, 41.3%). Among these patients, 3(4.9%) had a history of using opium and in one case (2.6%) other children in the family had a similar history.

Despite emergency treatment, four deaths (6.0 %), occurred 5(7.5%) admission in NICU, 1(1.5%) outpatient, 42(62.7%) admissions in the emergency department and 15 (22.4%) discharges with parents' permission. All deaths occurred in children under-1 year. Three out of 4 deaths (75%) were females from rural areas. These three deaths had illiterate parents and were Turkmen.

There was no significant relationship between referring

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date, type of opium, and the outcome of poisoning (P-value >0.05). The dosage of naloxone (antidote of opium) that was given to the child had no relationship with outcome (P value >0.05). Oral consumption was more prevalent in rural areas while inhalation was more seen in the urban regions (P value <0.05). There were no relationships between the age of the child and the route of poisoning, type of opium and the person who gave the opium to them. The symptoms and way of using or type of opium had no relationship but most symptoms were seen in oral usage.

### DISCUSSION

Recently, pattern of poisoning in children has changed dramatically.<sup>6-7</sup> Compared to other studies in Iran and most of the overseas,<sup>8-14</sup> opium intoxication has a higher prevalence among children under-5-year in our region. Studies in England and Wales from 1968 to 2000 showed that opioids have now superseded anti-depressants as the most common agents encountered in fatal poisoning with drugs in children.<sup>8</sup>

In Kadivar *et al* study (Iran, 2000), 34 cases were poisoned with opium. The maximum age was 3.5 years and the minimum was 7 days. In most of the cases, opium was prescribed by the relatives for diarrhea (32.4%), acute respiratory infection (26.5%) and irritability (20.6%). An addict person in the family was confirmed. Severe respiratory insufficiency and deep coma were the main cause of death in four children.<sup>2</sup> In Motlagh *et al* study, pediatric poisoning in Ahwaz city (South-west of Iran, 2000) was assessed. They found 13.6% cases poisoned with narcotic substances.<sup>15</sup> These studies confirm the present study results to some extent.

As indicated in other studies, opium was responsible for more than half of poisoned cases and most deaths among drug-intoxicated children. Opium prescription for symptomatic therapy of diarrhea, cough and other common illness by parents were major causes of poisoning,<sup>4</sup> this pattern is consistent with previous studies<sup>16</sup> and our findings emphasise this.

Perhaps the miracle opposed for opium in relieving pain and illness has lured parents into the belief that they do not need to seek any medical assistance to treat their sick children. Sedation of babies with opium is more common in some districts of the province than in others. One of the most disappointing results was about the person who gave the opium to the child was mother. Sometimes the drug is given by the maid or by the babysitter, who can rest while the baby is asleep. Other studies showed that the majority of medicines ingested by young children are administered by the family.<sup>3</sup>

Drug intoxication could happen in any age or sex. Over-dosage is usually not fatal, but is far more likely to

be fatal if the person is alone or in childhood. Even low doses of opioids are dangerous in the pediatric population especially under-5-year. Ingestion of opioid analgesics by children may lead to significant toxicity because of respiratory depression and suppressing central nervous system. Respiratory depression, bradypnea, coma and death are the serious outcomes of opium toxicity in pediatrics.<sup>17</sup> Despite emergency treatment, there were there four deaths (6.0 %).

Based on our experiment, we suggest that all children who have ingested any amount of these materials need to be observed in an emergency department (ED) for at least 6 hours and considered for hospital admission or ICU care. Primary attention should be directed to ensure adequate respiratory exchange.<sup>16</sup> If the route of intoxication is oral; we recommend preparation for an appropriate naso-gastric tube for lavage as soon as possible. Naloxone prescription as an antidote for opioids is very helpful. An initial dose of naloxone in each child with meiosis and decreased level of consciousness can even save the life of toxicated child.

### CONCLUSION

It should be kept in mind that such a practice of unrestricted use of opium is an important factor in children mortality and it is essential to launch educational programs to create awareness. Thus, informing families about serious poisoning and further attention of physician to non-specific signs of poisoning in neonatal period is recommended. Mother awareness forms the basis of children training, but here; their unawareness leads to morbidity and mortality of the child complaining of diarrhea, otitis media, *etc.* Therefore, lack of knowledge about adverse side effects of opium is the key factor in drug abuse in children. Due to illegal usage of opium, some questions remained unanswered and in some cases, parents preferred to get the child discharge before completing the treatment the, so outcome of some of these children remained unclear for us.

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