Opium Abuse and Its Management: Global Scenario

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The opium poppy is botanically classified as Papaver somniferum. The name poppy is derived from Latin meaning “sleep inducing”. To most not engaged in its cultivation, the poppy is an ornamental flower growing wildly in many parts of the world. However, its growth is most abundance in temperate and sub-tropical regions of the world. The plant is very hardy, easy to grow and does not need expensive fertilizer, insecticides or fungicides. Papaver somniferum produce mainly two products: opium and the seeds. The seeds are quite harmless; the opium on the other hand yields wide range of (dependence producing) alkaloids. The seeds are used as condiments for cooking. Harvesting opium is an exhaustive and labour intensive process and the opium pod is slashed/tapped to yield opium. Opium gum is a sticky dark brown substance with a strong odour. It is then beaten into homogenous mass and moulded into cakes or blocks which can be stored for months. This raw opium is processed to obtain various alkaloids namely morphine, thebaine, codeine and papaverine which have clinical usefulness. Today, in most areas where the plant is legally grown, the above opium collection stage is bypassed and the dried capsule known as poppy straw are processed to extract the alkaloids (Booth, 1998).

Opium and its use

Opium in its raw form can be drunk, swallowed or smoked, some process it further to obtain heroin. Opium eating in general refers to swallowing it or drinking it after it is dissolved in a variety of liquids. Raw opium has a bitter taste and eating it neat is not enjoyable. Despite this, it has been taken orally in many countries of the world including India. Smoking opium was mainly confined to China and some other countries of the South Eastern Asian Region. Currently, opium continues to be consumed by traditional means i.e. eating and smoking more so in many third world countries where it is grown.

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Some Important historical landmarks

- **C.3400 B.C.**: The opium poppy cultivated in Mesopotamia.
- **1620s-1670s**: Mughals introduce the habit of taking opium to Indian soldiers.
- **1793**: The British East India Company establishes a monopoly on the opium trade in India.
- **1821**: Thomas De Quincey published his autobiographical account of opium addiction: Confessions of an English Opium-eater.
- **1827**: E Merck & Company of Germany, manufactures morphine for commercial purpose.
- **1878**: Britain passes an Opium Act to reduce opium consumption.
- **1905**: US Congress bans opium.
- **1910**: Indo-China Opium Trade is dismantled.
- **1925**: A thriving black market of opium use opens up in many countries including the USA (New York’s China Town) (www.opiates.net and Booth, 1996).

Opium use in various countries

**India**

Habitual use of opium has been reported in India in the early 19th century. However, little attention was paid to the effects of opium on regular user. The first formal enquiry on the prevalence of opium use was made in 1893 and subsequently in 1895. These two Royal Commissions examined over 700 witnesses from all sections of the society and looked into various patterns of use of opium. The commission concluded that opium smoking was rare but oral consumption was quite prevalent. The recommendations led to the formation of British Government’s Opium Policy till 1947. The government however, took interest in the areas where its prevalence was high and appointed local committees to look into the causes of addiction and initiate measures for its eradication.

Opium smoking though was not common; they could be grouped under the following three categories:
- Occasional smokers
- Regular but moderate smokers
- Regular and excessive smoker

It was seen that the practice of giving opium to infants was quite common. Finally, smoking of opium in religious ceremonies was also reported. The Opium Act of 1857 and 1878 provided the legislative basis for strict control of opium and its use in India. Chopra & Chopra (1965) investigated the effects of regular opium eating among subjects in 1935. About 1600 subjects from both rural and urban India were examined and the study revealed that moderate users of opium were by and large healthy. Only a minority had shown signs of malnutrition. Summarising, most were occasional users and did not show sign of dependency.
However, a small minority were regular users and needed long term care and supervision. The British recognized this and had started registering these persons. The government allowed registration of opium users so that they could get their quota of opium from licensed shops maintained by the Excise Department of the Government. After gaining independence in 1947, India prohibited non-medical use of all intoxicating substances as part of the Directive Principles of the State Policy. Being a major opium cultivating nation and a signatory to various international conventions including Single Convention on Narcotic Drugs (1961), it made major strides in reducing non medical use of all intoxicating substances including opium. As a result of the above decisions, oral consumption of opium for non- medical purposes was prohibited throughout the country and fresh registration of opium users was stopped from June 1959. The number of registered opium addicts decreased from 200,000 in 1956 to 124,904 (1963) and still further to 80,809 (1977). This number stood at 570 in 2003 and only 44 were registered in 2004. The number of opium smokers also decreased similarly (Ray, 2005 personal communication).

However, the ground reality currently is a bit different in spite of stringent laws and other enforcement measures. According to the recently conducted National Household Survey on Drug Abuse in 2002, it was reported that 0.5% of adult males were current (use within last month) opium users in India. The report projected that there were about 1.4 million opiate users in the country. In another study carried out simultaneously, data from treatment centres (Drug Abuse Monitoring System-DAMS) revealed that amongst all patients reporting for treatment, about 9% were opium users. They were concentrated in certain states of India (Ray, 2004).

The above statistics clearly brought out the following facts:
- The number of registered opium abusers is very small (2004) even though there are an estimated 1.4 million opium abusers in the country today.
- Opium abusers are not reporting for treatment and comprise less than 9% of abusers seeking treatment in the organised sector.
  (Ray, 2004)

**An Ethnographic account of traditional opium use in India**

Ganguli et al. (1995) reported that opium use was widespread in certain section of rural population of India mainly in the North-Western Region of the country. Their study supported by the Indian Council of Medical Research (ICMR) interviewed 250 traditional users of opium from 1800 households in 6 villages of Rajasthan. The report stated:
- Opium was consumed in 2 forms: the nugget or the powder. These nuggets were dissolved in water, filtered and than the extract were drunk. In contrast, the powder was smoked.
- Opium consumption took place in social gathering and also to obtain relief from worries and anxiety.
- Often mothers introduced opium to their children.
- About 90% of them were well integrated in the society and were perceived as traditional users and only 10% were perceived as deviants.
Several authors commenting on the above finding reported that opium use in this part of India is well integrated into the socio-cultural fabric and resembles alcohol use in other communities. They used opium in ceremonies like marriages, funerals and other occasions. Opium was offered to the guests in the same way as food and drink. Its use cuts across castes and religious barrier. (Saxena 1995, Poshyachinda 1995 and Smart 1995).

China

Opium first reached China in the 8th century but it was not until the 16th century that European merchants discovered its commercial appeal. The widespread smoking of opium introduced by the Dutch resulted in the Chinese Empire prohibiting its use. However, following military success by the British during the Opium War in 1856, opium cultivation and its use in China increased and became more widespread. The British colonial government established, through Hong Kong, one of the largest business centres for prepared opium flowing into China (Mc Coy 1991 and Cheung and Ch’ien 1999). In 1918, opium accounted for nearly 45% of the colonial government’s revenue and it continued to contribute a significant proportion of its revenue until the beginning of World War II. The ease of opium availability resulted in a high prevalence of opium addiction. In the early 20th century, it was estimated that about 27% of its adult males were opium users and by about 1950s about 5% of the population were addicted to opium in China (McCoy 1991, Wu 1998, Wang 1999 and UNDCP 2000).

Myanmar and Laos

In Myanmar, cumulatively from 1974 to 2000 in the treatment centres, there were about 36,000 opium users and they comprised 59% of all registered addict and opium was still the preferred drug of abuse followed by heroin (32%) (Central Registry, Department of Health Planning, Ministry of Health, Myanmar).

According to the 1998 National Opium Survey (Lao People’s Democratic Republic), it was projected that there were about 63,000 opium users in the country, equivalent to 1.6% of the population aged 15 years or over.

Despite these above reports, it has been reported that even though prevalent, opium abuse is on the decline in these countries where it has been the dominant drug of abuse for long (Demand Reduction, Pillar II of the ACCORD Plan of Action, www.accordplan.net)

Iran

A random household survey in rural areas of Northern Iran found opium addiction rate was 69/1000. The number of registered addicts in the same population was however,
Thus there was many more opium abusers though not registered. The population in terms of registered addicts seemed to be very small and did not reflect the true picture within the society (Alemi 1978). A survey with a representative sample of 2519 university students found 4.4% reporting ever use of opium and out of this 0.8% reported currently using opium. Opium use was seen predominantly in men and early initiation was significantly associated with life stress and (Ahmadi et al, 2006).

In Iran among treatment seekers in urban De-addiction centre, major drug of abuse was opium (varying between 50 and 97%) (Ahmadi and Motamed, 2003). All were male, majority were married, and being employed.

**Opium Use in Afghanistan**

A drug use survey has been carried out recently in Afghanistan in 2005 with the support from UNODC. The survey report showed that there were about 150,000 opium users (0.6% of total population) in the country. About 35% of males and 25% of female users first used opium as refugees outside Afghanistan, particularly in Iran. Most users (86%) used opium every day and many male opium users had used other compounds mainly hashish. About 25% of opium users reported that other members of the family also used opium and about 10% of opium users grew their own opium poppies (UNODC, 2006).

**Other countries in Asia**

In addition to these countries, opium use has also been reported from Thailand, Bangladesh, Nepal and Sri Lanka.

**Medicinal Use of Opium**

Opium has been used as medicines in countries of the region. Traditional Indian system of Medicine-Ayurveda has used opium/tincture opium for several elements. These include conjunctivitis, analgesia, relief of pain for biliary and renal colic, anti-diarrhoeal, for common cold and cough and insomnia. As a matter of fact, opium was possibly the world’s first authentic anti-depressant. Theophrastus Bombastus von Hohenheim (1490-1541), better known as Paracelsus, claimed: “I possess a secret remedy which I call laudanum and which is superior to all other remedies”. He concocted laudanum (literally: “something to be praised”) by extracting opium into brandy, thus producing, in effect, tincture of morphine. His original brew contained extra ingredients such as crushed pearls and frog-spawn. It is mixed in alchemical mumbo-jumbo: Paracelsus called opium itself “the stone of immortality”. Thomal Sydenham, however, went on to standardise laudanum in the now classic formulation: 2 ounces of opium; 1 ounce of saffron; a drachm of cinnamon and cloves – all dissolver in a pint of Canary wine. Laudanum can be habit forming and abrupt discontinuation caused withdrawal signs resembling more of alcohol withdrawal rather than opiate withdrawal (Dwarakanath,
To summarise, many physicians in the earlier centuries viewed opium as a medicine and not a drug of abuse.

**Dependence and Treatment of Dependence**

Regular use of opium definitely causes dependence and cessation of its use gives rise to appearance of classical opiate withdrawal symptom though milder in intensity.

**Treatment:**

The data on treatment and outcome of opium dependence is not abundant, though some information is available. Several modalities of treatment including detoxification (unaided and also with the help of medicines) and methadone/buprenorphine maintenance and in several settings have been mentioned. Finally, some countries had well established system of opium maintenance in the form of a registry.

Treatment settings have been:

- Specialized De-addiction centre
- Community clinic
- Private sector hospital
- Psychiatric hospital
- Detoxification Camp
- Prison
- Non-specialist setting likes temples and religious shrines etc.

Medications used have been:

- Tincture Opium-for detoxification and maintenance
- Detoxification with clonidine
- Opium maintenance
- Methadone maintenance
- Buprenorphine maintenance
Detoxification:

*Use of tincture opium for detoxification:*

In **northern Thailand** in an open label study, 15 opium dependent persons received tincture opium (3.33–10 mg morphine equivalents 12 hourly) for detoxification as against methadone 5–20 mg 12 hourly. It was seen that those receiving opium tincture group did not do better. This could have been due to lower dose of tincture opium used, which was inadequate to satisfactorily suppress withdrawal (Jittiwutikarn et al, 2004). However, the author felt that it needed further evaluation, as a culturally acceptable alternative to methadone, it may be a useful and possibly more cost effective drug, but only after dose size and dosing frequency have been adequately investigated. Another report by C.Natrpratan from Ministry of Public Health, Chiang Mai, **Thailand** stated that in 1996, tincture opium was provided for treatment of opium dependence. Altogether, 87 opium smokers were identified. Tincture opioid maintenance was also used for heroin users for 5-9 months in 9 villages. This was a successful effort to control drug abuse as well as HIV infection control.

Tincture opium (1 % morphine solution) has been used in **Myanmar** for detoxification. Tincture opium along with chlorpromazine tablets have been used in gradual reduction methods over a period of 10 to 14 days and were also found to be satisfactory in suppressing withdrawal syndrome. Tincture opium is a cheap local product (produced by the Myanmar Pharmaceutical Industry) and has generally found to be equally effective compared to methadone. The drug has been made available to many (Nataparan, 1996).

Those dependent only on opium have shown good outcome, in treatment setup. Motivation for them to give up the habit because of social stigma and financial reasons and 84 per cent were not using opium at six months follow-up (Chandrasena 1980).

**Camp approach:**

Cold turkey methods have been tried in **Sri Lanka, Thailand and India.** Often these were carried out in non-formal settings including temples etc. Some did improve however, the approach caused immense discomfort to the patients and thus was not actively promoted.

Detailed descriptions of camp approach from **India** are available from several publications. Purohit in an article in South Asia Drug Demand Report (1998) elaborated upon its approach. Essentially, it involves two phases.

Phase - I (*Activities prior to camp*) - In collaboration with village leaders, the hospital community team plans the logistics of the camp about a month prior to it being held in that village. Patients are identified by the community leaders and motivated jointly by them and the social workers of the community team. The community team provides the manpower and medicines while the community leaders arrange the infrastructure and basic amenities. A suitable building is chosen and sometimes tents are erected to lodge 30-50 persons. The patients do not pay for the treatment carried out during their period of stay in the camp. These camps required about four to six weeks of preparation.
Phase-II (Activities during the camp) – It was seen that withdrawal symptoms appeared 24 hours after cessation of opium use, reached its peak between 3 and 5 days and reduced markedly between 7 and 10 days. Hence the duration of a camp is usually 10 days. Smoking is actively discouraged during the period of stay. Detoxification regimen is started and patients are evaluated for medical complications. The treating team comprised a resident doctor and a staff nurse on a regular, round-the-clock basis. Opium is withdrawn abruptly and the detoxification begins using clonidine, anxiolytic and other medicines for symptomatic treatment. A social worker is also available to conduct psycho-education group sessions. Thus the treatment consisted of both pharmacological and non-pharmacological modalities. Prayers and group meeting were regularly held during the camp.

Each camp has a formal inauguration and the organizers, local leaders, VIPs and ex-opium addicts attend. Ill effects of opium are highlighted and the users are motivated to give up opium use.

Usually the profile of these camp attendees (habitual opium users) is as follows: Majority of the opium dependent persons are village illiterates, most are married and farmers (72.5 per cent), most are in their mid-40s, report exclusive oral opium use and with mean duration of opium of around 10 years. Majority had never made abstinence attempt and during the camp they are motivated to get involved in treatment.

In certain places, some follow-up activities are carried out by the local government hospitals. Purohit and his team reported that about 60 percent abstained from opium at the end of 2 years following treatment in such a camp.

Such camp treatment for opium dependence has been used in various states of India (Punjab, Rajasthan, Gujarat and Himachal Pradesh) and has enjoyed wide acceptability and support from the public. Involvement of the local community is the key to its success. Its protagonists have felt that camp approach to treat opium dependence though unique, is very appropriate in rural India.

Treatment in China: In the early 1950s the Chinese government took a series of dramatic steps to combat widespread opium abuse, carried out a nation-wide anti-drug campaign to fight opium abuse. Those involved in cultivation, manufacture or sale of opium were subjected to severe punishments, including forced labour and execution, compulsory ‘treatment’ was instituted. During the 1990s, the Chinese government implemented a compulsory detoxification plan and a Community Drug Rehabilitation Camp for 1-6 months. Finally, drug users who relapsed after the compulsory detoxification faced mandatory placement in compulsory re-education through labour centres for 1–3 years. An average 12-months stay in such a facility resulted in improvement of 80 percent of the patients (Wang 1999). Recidivist addicts are put in the prisons. Those drug users who refuse to undergo voluntary detoxification are, when arrested by the police, transferred to rehabilitation centres and subjected to (law enforced)
detoxification and rehabilitation. Such an approach has not been put into practice in other countries. Drugs used for treatment have been methadone, buprenorphine, clonidine and Chinese herbal medicine. Naltrexone an opiate antagonist has also been used to prevent relapse.

Long term therapy

Methadone maintenance: Methadone has been assessed as maintenance for some subjects with opium dependence. A study finding suggests that opium-dependent patients can show marked improvement (70% were highly successful) while in methadone treatment; average dose used was 45 mg of methadone (Azeem and Falls 2002). In Iran, it has been used to treat opium addicts. In a short-term outpatient treatment of open label using flexible schedule of methadone up to 120 mg and opium pills containing opium extract up to 2400mg per day was used and authors reported better outcome with former (Moharreri 1976). Drop out due to inability tolerate higher dose opium pills containing chlorpromazine may be a limiting factor coming to any proper conclusions right now.

Buprenorphine maintenance: Ahmadi et al have published several reports of its use in opium dependence from Iran. In one of their study the efficacy of 1, 3, and 8mg of buprenorphine per day in the maintenance treatment of opium-dependent patients over a 6-month and 12 month period was evaluated. Results support the efficacy and safety of buprenorphine for outpatient treatment of opium dependence and seem to indicate that the highest dose (8 mg) of buprenorphine was the best of the three doses for Iranian opium-dependent patients to increase their retention in treatment (Ahmadi and Bahrami 2002; Ahmadi et al, 2004). The authors are of the view that buprenorphine is effective and safe too to treat opium dependence. However, adequate dose is required

Opium Registry in India

India had a well established system of Opium Registry, wherein regular users of opium following certification by an authorised government doctor could receive small amount of opium from licensed outlets maintained by the government. It has been stated earlier in this article that the number of registered addicts was around 200,000 in 1956 and this number stood at 44 in 2004. This is because Government of India stopped issuing fresh registration of opium addicts since 1959 (although they exist and continue to buy opium from the illegal drug market!) Thus India has considerable experience in this area, when various states used a legal registration system for opium users.

An expert committee was formed on the initiative of Ministry of Health and Family Welfare, New Delhi (1986) which recommended introduction of opium registry for distribution of opium to registered opium users in the country with the option of extending this facility to all opiate users at a later stage. Guidelines for distribution and identification of persons suitable for registry were also discussed (Ray, 1998)

More recently a national workshop (August 2004) re- examined the various issues regarding reviving the opium registration. In the ensuing discussion, a consensus
emerged that opium registry is desirable in the country but there is a need to revamp the existing infrastructure and incorporate supervisory mechanisms at various levels. One important area of concern was the possibly of illicit diversion. However, it was agreed that excessive controls may be counterproductive and that excessive control of opium use had led to increased use of illicit opioids including heroin in South East Asia.

The group agreed that there was a need to formulate guidelines on the quantity of opium to be given decide on suitable outlets for dispensing opium and prevent diversion from there and institute a proper delivery system. The group was of the view that:

1. Opium users are productive citizens and can be considered law abiding apart from purchase of illicit opium
2. Opium use enjoys social acceptability in certain geographic areas in specific population groups
3. All opium users are not dependent in the strict sense of the term
4. International conventions do not bar the country from formulating its own policies regarding opium registry

The group recommended that

1. There is a need to revive the opium registry in India.
2. The areas needing further discussion before reviving the opium registry include:
   - Feasibility inputs from state Excise Commissioners
   - Need to specify qualifying criteria for being included in the opium registry:
     a) Calculation of amount to be dispensed
     b) Dependent users vs. occasional users
   - Decision on who dispenses
   - Certifying authorities
   - National or regional applicability
   - Logistic details
   - Supervisory authorities to prevent
     a) Diversion
     b) Ensure compliance
(Ray, 2005 personal communication)

**Naltrexone:** The data on naltrexone is non-existent.

To summarise, It can be stated quite clearly that opium is a low dependence producing compound and withdrawal symptoms, though evident are much milder and many may be in a position to give up after a brief course of treatment and many may not need long-term pharmacotherapy. Medication free status following detoxification should be given a fair clinical trial. However, some authors have felt the need for long term medications and in this context, methadone or buprenorphine are considered ideal agents for maintenance programme for a select few. Finally, wherever its use (traditional as well) is widespread, creating public awareness about its hazards would bring about changes.
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