

## The Problem of Opium Addiction in India and Its Treatment

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**O**PIUM and poppy were introduced on the west coast about the ninth century A.D., by the advent of the Mohammedan traders, and opiates soon came into use. A study of records shows that during the period of the Moghul Empire, alcoholic beverages, opiates and hemp drugs were freely used. A decoction made from poppy capsules known as *koknar* was extensively used all over India. Opium, on account of its stronger effects, appears to have taken a great hold of the people.

Most of the raw opium sold in this country is used for addiction purposes in one form or another. The present use of opium in India may be considered under five main headings:—(i) Opium eating, (ii) opium smoking, (iii) poppy drinking, (iv) addiction to opium alkaloids, and (v) administration of opium to infants.

(i) *Eating of opium* is the favourite method of indulging in the drug. The common practice is either to pound the drug, mix it with water (*Kasumba*) and drink it or take it in the form of a pill. From the figures I have collected all over India it appears that the consumption of opium, if the country is taken as a whole, is very low, but curiously enough there are certain areas where it is very high. The areas of high consumption are Calcutta, Hooghly, Howrah and 24 Parganas in Bengal Presidency; East Godavari and West Godavari in the Madras Presidency; Ferozepore, Lahore, Ludhiana and Amritsar in the Punjab; Bombay town, Ahmedabad and Broach in Bombay Presidency; Amraoti, Akola and Balaghat in the Central Provinces; Cawnpore, Benares and Lucknow in the United Provinces; Assam as a whole shows high consumption, where the districts of Lakhimpur, Sibsagar, Nowgong, Darrang and Kamrup are noted for very high consumption of this drug. The highest consumption rate recorded in India is in the Sadiya Frontier Tract, where it is 94 seers per 10,000 of population per annum. The high figures are due to smoking of the drug, which necessitates much larger quantities of opium per head. On the other hand, there are extensive areas in all the provinces where consumption is very low, i.e., even less than

12 lbs. or approximately 6 seers per 10,000 of population per annum, a standard laid down by the LEAGUE OF NATIONS for Medical and scientific needs of the people. Such areas are now on the increase. According to the survey by the author and his collaborators it is estimated that there are at least between one to five and a half million opium addicts in India, i.e., approximately 0.5 to 1 per cent. of the total population.

(ii) *Opium smoking*.—It is not clear how this habit came into this country; probably it was introduced as a part of tobacco smoking by the Chinese or Mohammedan invaders but fortunately it never assumed such a menacing aspect as it did in China. Our present enquiries show that the habit of smoking opium in one form or other is met with on a small scale in many of the large towns in India. It would appear that the habit of smoking opium has considerably declined during the last thirty years. In most parts of India, therefore, this is a very uncommon method of consumption of opium at the present time. The only exceptions to this rule are Assam and the Central Provinces where opium smoking is almost as common as opium eating. According to a recent survey we have carried out (1938) it is estimated that at present there are between 62,000 to 83,200 opium smokers in India, out of which 25,000 are from Assam and 15,000 from the Central Provinces and Berar.

(iii) *Drinking of beverages made from poppy heads (unlanced capsules of *Papaver somniferum*)*.—During the sixteenth, seventeenth and eighteenth centuries when the Moghuls were in power in India, the poppy capsules or 'post' capsules were extensively used to prepare a beverage which had soothing and euphoric effects. The use of poppy beverages has considerably decreased during the last three decades but still exists in a few localities in the Punjab and Rajputana. The effects are almost similar to that of opium eating. There are at present between four to five thousand poppy addicts in India.

(iv) *Addiction to opium alkaloids*.—Habitual use of morphine has considerably increased in India during recent years in



certain parts of Northern India. The addiction is usually met with in young persons between the ages of 20 to 25 years. The habit is generally started on account of the euphoric and aphrodisiac properties of the drug. In the beginning this alkaloid was taken almost exclusively by the mouth but recently the injection method has also come into vogue. The physical, mental and moral deterioration sets in much more rapidly than is the case with other forms of opium addiction. Addiction to other alkaloids of opium such as codeine and heroine, etc., is rare in this country.

(v) *Administration of opium to infants.*—The practice appears to have been started because of the drug's power of allaying diarrhoea and vomiting, relieving cough and pain, and producing sleep. The only areas where the custom is still extensively prevalent are certain parts of the Central Provinces and Berar and few other industrial areas all over the country. In Berar 75 per cent. of the infants are doped with opium. In the cotton-growing areas the children account for 40 per cent. of the total consumption of opium. The main reason for administering opium to the children are economic; the drug is given to keep the children quiet so as to allow the mother to carry out her work unhampered whether in the factory or in the field. The practice is begun during the first few weeks of the infant's life and is usually discontinued when the child attains the age of two or three years when it begins to play about and can live on ordinary food. The use of opium affects the child's health adversely and hinders its growth. The children receiving opium have an emaciated, unhealthy and toxæmic appearance. They are more liable to catch infections and to attack of epidemic diseases and the mortality rate among them is comparatively high.

#### AETIOLOGY OF OPIUM ADDICTION

Social and economic factors play an important part in starting and continuing this habit. The standard of social and hygienic conditions of the working classes in this country is very low. No healthy amusements are available and the workers living under such conditions are in search of some form of diversion which will enable them to forget at least for the time being, the monotony, hardships and worries of their daily existence. Their intellectual development is low, the housing conditions are primitive and over-

crowding is general. The above conditions predispose them to the habit as it gives something which enables them to forget their worries. The main direct causes leading to the opium habit as studied in a series of 1,238 addicts were (1935):—(1) Association with other addicts which accounted for 50 per cent. of cases; (2) diseases or minor ailments for which no medical advice was sought, 33·3 per cent.; (3) hard work, worry or strain, 13·3 per cent.; (4) substitute for alcohol, 3·4 per cent.

#### PHYSICAL AND MENTAL EFFECTS

(a) *Opium eating.*—From an analytical study of 1,238 opium eaters the following conclusions are drawn: The habitual use of opium and in small doses may not produce marked physical or mental deterioration. Such addicts may keep fit, gain in weight and carry on their ordinary vocations of life efficiently for many years. With larger doses the gastro-intestinal tract becomes seriously disturbed, obstinate constipation alternating with Diarrhoea and loss of appetite supervenes. The addict shows signs of toxæmia, loss in weight, anæmia, sallow colour, etc., and even signs of cachexia. Opium habit is more liable to cause injury to the mental and moral faculties of persons with a nervous diathesis or with nervous irritability than to normal individuals. The common changes observed in such individuals are development of lazy habits, impairment of memory, slow cerebration, lack of self-confidence, selfishness and irritability of temper.

(b) *Opium smoking.*—From a careful study of 300 opium smokers the following conclusions are drawn: It has been observed that the Chinese and the Burmese smokers as a rule seem to suffer less than the Indian smokers. They are able as a rule to regulate their dose with precision and keep the daily consumption within limits which would not endanger their earning capacity by causing adverse effects upon their general health. The effects of general unhygienic environments, neglect of general health, lowered standard of living, and the use of a common smoking pipe are responsible for spreading such communicable diseases as syphilis, tuberculosis, pyorrhea alveolaris, amongst the habitues. Their role in causing incapacity amongst the habitues is nevertheless important. In the majority of smokers, the cost of the drug may be as much, or even more, than their earnings.



In order to make both ends meet the habitue tries to stimulate his physical energies by further increasing the dose so as to perform more work which further undermines his health and gradually decreases his working capacity. Eventually there is a complete loss of earning capacity and he is useless to himself and to society.

The confirmed opium smokers as a rule always show marked physical deterioration. The excessive smokers are thin, emaciated persons with sallow or muddy complexion, and dull and sunken eyes. The throat is often bad and constantly subject to attack of tonsillitis, pharyngitis and chronic bronchitis. The appetite decreases and may be lost, the food is not properly assimilated. When the drug has been abused for a long time the sexual impulse is very often deficient and wanting.

Prolonged and excessive smoking produces a lethargic state of mind, dullening of the mental processes, gradual loss of will power, neglect of work, subordination of every interest to the craving. Opium becomes the main object in life.

*Biochemical studies.*—Biophysical and biochemical properties of the blood serum were studied in opium addicts, when under the effect of opium and during the period of abstinence. The work on the physical properties of the sera of opium addicts shows that the blood of opium addicts becomes hydræmic. During the withdrawal period the hydræmia disappears and the blood becomes more concentrated and this is maintained both during and after the treatment. The lecithin and cholesterol contents of the blood were also determined simultaneously to see if these had any bearing. The results so far obtained indicate: (1) that in the majority of cases, the blood lecithin content is normal though in a few cases it is somewhat lower; (2) that there is an undoubted increase of lecithin in the blood, during the course of lecithin treatment; and (3) that the cholesterol figures are somewhat irregular and seem to bear no direct relation to the actual condition of the addict or to the lecithin contents.

*Opium smoking and opium eating.*—Smoking and eating of opium are different aspects of the same problem though the former is believed to be more harmful than the latter. The opium smoker needs very much larger quantities of opium to satisfy

his cravings than the eater, but in spite of the smaller quantities of the morphine absorbed, the practice appears to be more harmful. The process of preparation is a long one and the actual smoking naturally takes longer time than swallowing of pills or a mixture of opium and water. For these reasons the smoking of opium is very often abandoned during later stages of addiction when the dose has become very large. The abstinence symptoms in case of smokers are more pronounced. The smoking habit more often is the outcome of the euphoric or pleasure-giving effects of the drug, while such causes of the disease as fatigue and old age frequently lead to the habit of eating opium. The increase in dosage in case of smokers is much more rapid, probably due to the fact that the actual amount of morphine absorbed into the system is smaller with each dose. The chemical changes which the constituents of opium undergo by drastic heating during the process of preparation for smoking must also be taken into consideration when comparing the effects. Although their exact nature is not known, it would appear that during the process of heating the effects of the drug become more potent. Also there is no doubt that the effects of non-alkaloidal constituents of the smoke, that is, other products of combustion, also play some part.

#### TREATMENT OF OPIUM ADDICTS

Following the lead given by our biophysical and biochemical researches, a large amount of work has been done in connection with lecithin treatment of opium addicts in the Carmichael Hospital for Tropical Diseases. This treatment has been tried with success on several thousand opium addicts who were taking doses of opium ranging from 45 to 250 grains daily in Upper Assam Valley during the recent prohibition campaign against the drug by the Assam Government. Briefly, the procedure adopted is as follows: Opium is suddenly withdrawn and a dose of 1-3 grains of calomel is given at bed time which is followed by a dose of salts next morning. The last named is repeated every morning for the next few days to eliminate opium from the system and to help the liver to function. On the second day after withdrawal, lecithin is given in 20-grain doses thrice daily in the form of a pill. In a certain number of cases lecithin by mouth causes nausea, and in such cases,



the drug may be given in the form of a colloidal solution by injection, the usual dose being 2 c.c. of 1 per cent. solution twice daily. Experience has shown that lecithin when given by injection, acts better than when it is given by the mouth. Besides this, the amount required to produce the desired effect is comparatively small and consequently the cost of treatment is considerably reduced. During the period of abstinence the patient is encouraged to take plenty of fluids and glucose by the mouth as these greatly ameliorate the symptoms of withdrawal. He is also given 25 c.c. of 25 per cent. glucose along with 10 c.c. of 10 per cent. calcium gluconate by the intravenous route during the first five days of the treatment. Glucose by the intravenous route helps in the elimination of the opium alkaloids and stimulates the glycogenic function of the liver. It also serves as a ready food for the heart during the withdrawal period when all other food is generally refused. Calcium controls the muscular cramps which are commonly met with during the period of abstinence.

The duration of the treatment varies from seven to twelve days according to the dose, the duration of addiction and the age of the addict. Such untoward symptoms as low blood pressure and feeble pulse are combated by means of cardiac stimulants. Adrenaline given in doses of 5 to 10 minims checks the tendency to nausea and vomiting. Diarrhoea which is often a troublesome symptom is controlled by administration of such simple drugs as bismuth carbonate and aromatic chalk powder in 10 to 15 grain doses. The cramps and pains all over the body are treated by massage and administration of analgesics such as aspirin, phenacetine and veramon. In cases where the pains are very severe and unbearable, intramuscular injections of 2 c.c. of novalgin (Bayer) often give relief. Injections of 1/100 grain of hyoscine hydrobromide were tried but with little effect. Insomnia is a very troublesome symptom during the first few days of the withdrawal period and sometimes for several days after. Medinal in doses of 7½ grains is often effective in inducing three to five hours sleep. In cases where insomnia did not yield to barbiturates, alcoholic extract of *Rauwolfia serpentina* in doses of 10-20 minims was effective. Lecithin is usually stopped 4 to 5 days after withdrawal of the drug and

the patient is put on a tonic mixture containing iron, arsenic and strychnine.

With this treatment it has been shown that the discomfort due to the withdrawal of the drug is reduced to the minimum and most of the patients gradually develop a dislike for the drug. The mental outlook of the addicts also shows a remarkable change. Addicts who were definitely apathetic and morose before the start of the treatment have been observed to become cheerful and energetic and gradually begin to take an intelligent interest in their surroundings. They become more sociable, docile and respectful and show inclination for work. A change in the physical appearance is also observed in some cases. This is probably due to the improvement in the general health and better digestion and inclination for food.

The morphine content of the urine of addicts was determined daily during different stages of treatment under hospital conditions. Morphine could be detected in decreasing amounts during 4-5 days after complete withdrawal of opium. It could not be detected in the urine after this period.

The total course of treatment varies from 7 to 12 days and during this period the change in the condition of the addict, is marvellous. The patients treated in the hospital are kept under further observation for a period varying from 4 to 12 weeks in order to rehabilitate and change and train them to the new environment and to watch for any relapse occurring. The period of rehabilitation and rebuilding of the personality of an addict may sometimes extend to 6 months.

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