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Journal homepage: <https://www.ijpp.org.in/>**Review Article****Ahifen: A critical review**Preeti Sharma^{1,*}¹Dept. of Dravyaguna, Kritika Ayurvedic Medical College and Hospital, Bareilly, Uttar Pradesh, India**ARTICLE INFO***Article history:*

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ABSTRACT

Poppy, a plant belonging to the papaveraceae family, is the source of opium. It is a plant that blooms. It has sedative, somniferous, and neurotoxic properties in addition to being cerebrally poisonous. Due to its neurotoxic nature, opium causes a variety of adverse effects, including anxiety, seizures, hallucinations, sleepiness, giddiness, and many more. In order to create various types of analgesic medications to cure pain and promote sleep, this poppy is grown as an agricultural crop. The main source of opium, or dried latex made by the seed pods, is the opium poppy, as its name suggests. Because opium has sexual properties, many people use it for extended periods of time before becoming addicted.

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For reprints contact: reprint@ipinnovative.com**1. Introduction**

Opium is a somniferous poison. Somniferous is also a narcotic poisons. In modern science opium is also categorized in neuro toxic somniferous poison. Opium is also called as poppy, Affim, Aafuk, Ahifen and Posta.¹ Medically it is use for treating pain and inducing sleep. Crude opium has a characteristic bitter in test. Latex is obtained by scoring or lacerating the immature seed pods. The latex out and dried to a sticky brown residue. This is scraped off the fruit. Seeds of opium are non-poisonous and are called Khaskhasor Postdana which is creamish in color and used in cooking. Plants are the prime source of medicine in Ayurveda. Several compounds have been isolated from medicinal plants and introduced for the service of mankind; however most of these medicines have been withdrawn due to their toxicity or side-effects.²⁻⁴ Most of the plant drugs are safe, yet few are toxic for human health. These poisonous/toxic plants are categorized as viṣa (poison) and upaviṣa (toxic but not lethal for human health) in Ayurvedic texts. According to Ayurveda Ahiphen

is categorized in Upvisha Varga.⁵ and also listed in the schedule-E of Drugs and Cosmetics Act 1940.⁶

2. Materials and Methods

The data were collected from

1. Ayurvedic as well as contemporary literatures
2. Scientific journals, books etc.
3. Covers all review articles and available records.

2.1. Discription*Papaver somniferum Linn*

1. *Kula:* Ahifen Kula
2. *Family:* Papaveraceae (Gk Papa=milky juice poppy)
3. *Varga:* Upavisha
4. *Latin name:* Papaver somniferum (Linn). (somni=sleep, fera= produing).
5. *English name:* Opium
6. *Sanskrit name:* Aaphook, Ahifen, Aphan, Niphen, Nagaphen, Rasodbhootam, Khaskhasrasa.

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7. **Botanical Description:** The tree is 1 to 1.5 mtrs. High. Stalk is green in colour, tender, hairy and snigdha. Root are subtle and medium. Flowers are white, red or black in colour. The fruit has the size of pomegranate fruit having different cells, small size, and it gets ruptured on its own. It is called as doda. This fruit shell is called as poshta. Seeds are white or black in colour, unctuous and sweet. They are called as poppy seeds (poshta dana or khakhas.) Aphoo is the latex of this fruit. The raw fruit is incised in the evening and on the next day, early in the morning, the latex is scratched and dried. This is morphine.
8. **Varieties:** According to the floweres, it is of 3 varieties.
 1) Khaskhas White –Its flower is yellowish white and seed is white. 2) Khaskhas Mansoor –Both flower and seen are red in colour. 3) Khaskhas black- Both flower and seeds are black or blue.

There are four varieties according to flowers mentioned in Nighantu:

1. White 2) Yellow 3) Black 4) Chitra
2. According to action , four varieties have been described:
3. Jaran 2) Maran 3) Dharran 4) Saran
4. Modern science has classified it by names of the counties of origin-
5. Turkey 2)European 3) Perian 4)Indian
6. Turkish opium is used most frequently.

2.2. Habitat

In the countries of the northern temperate zone, Asia minor, Persia, China, Nepal, Burma, India. In india also especially Uttar Pradesh, Bihar, Bengal, Vindhya Pradesh, Malva, Assam.

Morphine is widely used illegally.

Period of collection and preservation– January / February.

Other information: Seeds of opium are called as khaskhas. It is madhur in rasa, balya and virilizer. The properties of shell of fruit are same like that of opium. It is available in market. It is not described in Charaka, Sushruta, Vagbhatta, but in Raj Nighantu and Bhavaprakash its description is available. It had been used for the first time in 3rd century in Asia Minor. Then Arabs used it and later populararised it in India and Iran. Opium is a majjagami dravya. It acts first on majja dhatu. It reduces fluidity in the body but sweat, urine and breastmilk are not reduced.

2.3. Cultivation

It is cultivated World-wide; mainly it is cultivated in Asia, South Africa, North America and other Eastern countries. In India, it's mainly grown in Madhya Pradesh, Rajasthan and Uttar Pradesh.

2.4. Chemical composition

It has 29 different active principles amongst which morphine (5.2%) codeine (0.3-4%), the baine (0.3%) and narcotine (2 to 7%) are the main principles.

2.5. Active principle

The opium has about 25 alkaloids, divided into two groups: A. Phenanthrene derivatives (main narcotic constitute)

1. Natural alkaloids

- (a) Morphine (10%): White color powder, bitter test and Alkaline in nature
- (b) Codeine (0.5%)
- (c) Thebaine (0.3%)

2. Semi-synthetic opioids: They are produced by chemical modification of an opiate and include hydromorphone, diacetylmorphine (heroin, brown sugar or smack), oxymorphone and oxycodone.

3. Synthetic opioids: These substances are not derived from an opiate, but binds to an opioid receptor and produce opioid effect clinically. It includes methadone, fentanyl, pentazocine, tramadol and meperide (pethidine).

Benzyl-isoquinolone derivative (no significant CNS effects)
 1 Papaverine (1% 2 Noscapine (6%)⁷

3. Ayurvedic View

Rasa – Tikta, Kasay Guna- Laghu, Ruksha, Sukshama, Vyavavi and Vikasi Virya-Usna Vipaka- Katu Prabhava- Madaka Doshakarman- Kaphavata Shamaka and Pitta Prakopaka.⁸

4. Licensing

In most countries including India, it can be cultivated only by license from the government. In India, legal cultivation is carried out only in Madhya Pradesh, Rajasthan and Uttar Pradesh. License is given by the Central Bureau of Narcotics (CBN). The entire opium product must be sold to the government. If any licensed cultivator illegally sells of opium, he would be awarded rigorous imprisonment of 10-20 years and fine of Rs. 1-2 lakhs (S. 19 NDPSA 1985).

5. Routs of Administration

It can be taken by snorting smoking or chasing (chasing the dragon), intravenously (mainlining) and subcutaneous (skin Popping). It be mixed with cocaine (known as speed balling) and then taken by addicts.

Metabolism of opium Most opioids are metabolized in liver by hepatic conjugation to inactive compounds

that are excreted readily in the urine. Certain opioids (propoxyphene, fentanyl and buprenorphine) are soluble in lipids and can be stored in the fatty tissue of body.⁹

5.1. Purification of opium

To promote and introduce their use for medicine, such plant drugs must be detoxified or purified before their use.¹⁰ It is cited in the treatises of Ayurveda that by the used of proper method of processing, *viṣa* can be converted into *amṛta* (nectar) and on other hand on adoption of inappropriate methods, nontoxic materials become a toxic.¹¹ The concept of Śodhana in Ayurveda not only covers the process of purification/detoxification of physical as well as chemical impurities but also covers the minimization of side effects and improving the potency/therapeutic efficacy of the purified drugs.¹² Severe toxicity of opium can also be reduced by triturating with ginger juice. This process is repeated 21 times.¹³⁻¹⁵

6. Clinical Feature

The Effects Occurs in Three stages

1. Stage of excitement
 1. (a) It is short duratio
 - (b) The person feel better with increased sense of well-being
 - (c) Talkativeness
 - (d) Restless or hallucinations
 - (e) Flushing of face
2. Stage of Stupor
 1. (a) Headache Nausea and vomiting
 - (b) Giddiness
 - (c) Drowsiness
 - (d) Miosis
 - (e) Stupor
3. Stage of necrosis
 1. (a) Patient passes into deep coma.
 - (b) Muscles become flacid
 - (c) Absent reflexes
 - (d) Hypothermia Hypotension
 - (e) Bradycardia Bradypnea Conjunctiva-congested
 - (f) Face - pale Non-cardiogenic edema Convulsion
 - (g) Respiratory depression
 - (h) Death

During the terminal stages, ARDS develops and pink froth comes from the mouth (foam cone), pulse is slows, irregular and imperceptible becomes Cheyn-Stokes, and ultimately deep coma and death due to respiratory depression and cardiorespiratory arrest.

6.1. Chronic poisoning

It is seen in addicts after a long periods of opium usages. Habit is forming by young people as opium is considered as aphrodisiac and pain reliving. Addicts can tolerate 3-6 gm. of opium per day.

6.2. Clinical feature

1. Insomnia
2. Emaciated
3. Pupil – contracted
4. Tounge- dry
5. Restlessness and irritability
6. Weakness
7. Immune system is compromised
8. Innate immunity and adaptive immunity both are depression. · Sexual- importance
9. Anorexia
10. Nausea
11. Marked constipation
12. CNS- Mania, hallucination, intellectual and moral deterioration, loss of memory and mental fatigue.

7. Differential Diagnosis

1. Alcohol intoxication
2. Barbiturate poisoning
3. Carbon monoxide poisoning
4. Carbolic acid poisoning
5. Hysteria
6. Head injury
7. Heat hyperpyrexia
8. Uremia coma
9. Diabetic coma
10. Cerebral hemorrhage
11. Cerebral malaria
12. Meningitis.¹⁶

7.1. Therapeutic dose

1. Opium -30-125 mg
2. Morphine- 10-15 mg
3. Codeine- 10-60 mg¹⁷

7.2. Fatal dose

1. Opium- 2 gm
2. Morphine-200mg
3. Codeine-50mg¹⁸
4. Fatal Periods
5. 6-12 hours

7.3. Management of opium poisoning

1. Supportive vitals through respirator and other emergency procedures.

2. Decontamination: stomach wash frequently with 1:5000 KMnO₄ leaving some amount of solution in stomach to oxidize the alkaloid that might be secreted in stomach after absorption. Lavage should be carried out even after IV/IM injection of drugs, as it is secreted in the stomach.
3. Administration activated charcoal – methods of choice for decontamination following ingestion.
4. Enema with 30 gm. of sodium sulfate twice daily.
5. Bowel irrigation
6. Ventricular tachycardia can be managed by lidocaine.
7. Antidote- narcotic antagonist naloxone in an initial dose of 0.4-2mg IV/IM repeated every 2-3 min up to 10 mg, if no response occurs possibility of an overdose with benzodiazepine should be considered, and a challenge with IV Flumazenil, 0.2 mg /min up to maximum of 3mg in an hour might be used.
8. Nalmefene has pure opiate antagonist effect and could and could prove superior to naloxone.
9. According to Ayurveda Brihatkshudra rasa, suthi and aadraka is antidote of opium.
10. Marquis test- It is a simple spot test to presumptively identify opiate and amphetamines. 3ml of concentrated H₂SO₄ + 3 drops of formalin are added to suspected sample. Purple-red color is observed which gradually changes to violet if opiate are present.
11. Mandelin test- This test can be used to test for a variety of alkaloids. The reagent consists of ammonium vanadate in concentrated sulphuric acid. The alkaloids produce characteristic color change morphine: blue gray, codeine: olive, heroin: brown and methadone: green to blue.

8. Post Mortem Findings

8.1. External

1. Smell of opium from mouth or nostrils.
2. Cyanosis on over all body or blackish.
3. Froth at the mouth and nostril.
4. Pupils are constricted or pin point pupils, can be dilated also.
5. Allergic reaction to intra venous heroin may be seen.
6. Needles prick or tracks are found occasionally, depending on the route of intake.
7. Post mortem staining is purple or blackish internal.
8. Diffuse cerebral edema.
9. All internal organ are congested, trachea contains frothy secretions.
10. Blood is dark and fluids.
11. Stomach may show presence of opium partial's, smell and soft brownish lumps of opium.

8.2. Medico-legal aspects

1. Opium is a poison of choice to commit suicide (ideal suicidal poison), since death is painless.
2. Homicidal is rare, because of bitter taste and characteristic smell or odor.
3. Morphine is one of favored for euthanasia.
4. Accidental opium poison is also common among addict. Drugging of children by opium to keep them quiet and over dose of medicine may result in accidental poisoning.
5. Infanticide by breast-feeding an infant by a woman who had smeared her nipple with tincture opium.
6. Various nonproprietary formulation, folk remedies, and herb may contain opium, and administration of these results in unintentional poisoning.
7. Some-time opium is used for doping racehorses.
8. Opium increases libido hence it is used as an aphrodisiac.
9. Some criminals take opium to build courage before committing a crime.
10. Opium disappears with purification, so it may not be detected in putrefied bodies.
11. Cattle poison – rarely.

9. Conclusion

The opium herb is kapha vata hara, tikta, kashaya, vyavayi, vikashi, vednasthapka (pain reducing), madkari, balya, vrishya (aphrodisiac), sukra sthambhka, swashar, grahi (absorbent) and nidrajanan. The opium herb is kapha vata hara, tikta, kashaya, vyavayi, vikashi, vednasthapka (pain reducing), madkari, balya, vrishya (aphrodisiac), sukra sthambhka, swashar, grahi (absorbent) and nidrajanan. It is effectively used in atisara, kasa, jvara and nidra nasha. Opium is a powerful analgesic. Opioids are great pain relief, for the short term used where the duration of use is limited by cause of pain, generally healing of wound or repair of injury during the surgery, or the death when drugs are used as demulcent (palliative) setting. Many products in the market for children and adults were sold for pain and cough relief, they all contained opium. Opium is also very strong pain killers but we must know that they have a big drawback to addiction. Commonly seen side effects with opium use (short term) are nausea, constipation and many other congestive impairments. Ayurveda doctors prescribing opium substances must know that tolerance towards opium means that over time the patient needs higher doses to achieve the same level of pain relief and therefore prescribing opium needs monitoring, caution and care. As per the concept of Ayurveda, "even a strong poison can be converted to an excellent medicine if processed and administered properly. On the other hand, even the most useful medicine may become a poison if handled incorrectly." It may be concluded that.

Large dose of opium exhibited toxic effects of central nervous system, induces sleep, relieves pain and develops euphoria. Toxic effects of opium can be reduced by steeping in cold water for 5–6 h. After this process, the insoluble brown latex obtained is used in the Ayurvedic medicine. Various clinical research works have also proved that, The opium obtained from the fruits of *Papaver somniferum* Linn. Is bitter, astringent, sweet, constipating, aphrodisiac, sedative, somniferous, narcotic, myotic, and antispasmodic. It is used for the treatment of cough, fever, inflammatory affections of eye, proctalgia and low back pain due to diarrhea and dysentery, migraine, malaria, dysmenorrhea, cystitis, menorrhagia, and other painful conditions.

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11. Conflict of Interest

The author declared that there is no conflict of interest regarding the publication of this article.

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