



AN APPROACH TO NARCOTIC DRUGS WITH SPECIAL  
REFERENCE TO RASASHASTRA

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ABSTRACT

*Rasashastra* is the branch of Indian alchemy which deals with the pharmaceutical and therapeutic scope of the medicinal products of mercury, other metals, minerals, precious stones, bovine, marine, narcotic, poisonous and various herbs for curing ailments and rejuvenation. In the field of *Rasashastra*, many poisonous drugs have been dealt with. These are classified as *Visha* and *Upavisha*. As these drugs produce the action of *Mada* (intoxication) and possess the *guna* of *Madaka dravya* like *agneya*, *vyavayi*, *vikasi*, *sukshma*, these can also be considered as *Madakari*. This paper attempts to understand the *Karmukata* of Narcotic Drugs along with *Rasa Dravyas*, and how these formulations act on Target organs with minimal dose.

**Keywords:** Narcotic drug, *Madaka*, *Visha*, *Upavisha*, *Parada kalpas*.

**INTRODUCTION:** Use of narcotic substances for euphoric purposes goes back to many centuries and each of them has a history of human addiction behind it. A view of the degenerate effects of the drugs on the individuals, Government thought it fit to restrict their use to bonafide medical purposes only.<sup>1</sup> the cultivation of poppy was brought under control in India in 1857, when the opium act was enacted to regulate the production of opium. This was supplemented by opium act-1878, which imposed restriction on the possession, sale, supply etc. of opium. Later in 1930, Dangerous drugs act was passed to control over operations relating to the dangerous drugs, especially those derived from opium, Indian hemp and coca leaf.<sup>2</sup> now substances and preparations fall within the scope of narcotics act, which are as a result of amendments to the schedule to the single convention of 1071 on psychotropic substances. Practitioners, Dentists,

Veterinary doctors, Pharmacies, hospitals are mentioned by the 16 supervisory health authorities at federal state levels. Narcotic act recently amended in 2014.<sup>3</sup> Narcotic drugs are those which produces Narcosis. Narcosis is a physiological condition in the normal responsiveness or automatic activity of the living system-organism, tissue or cell is temporally decreased or abolished.<sup>1</sup> By observing the definition of narcotics we can correlate the narcotic drugs to the *Madakari dravya* explained in Ayurvedic classics. Those drugs intoxicate the intellect are called *Madakari* which are predominant of *tamoguna*.<sup>4</sup> ex: *Madhya*, *Sura* and others like *Ahiphena*, *Vijaya*, *Dattura* etc. *Rasashatra* is the branch of Indian alchemy which deals with the pharmaceutical and therapeutic scope of the medicinal products of mercury, other metals, minerals, precious stones, bovine, marine, narcotic, poisonous and various herbs for curing ailments and rejuvenation.<sup>5</sup> Drugs derived from opium

hemp and stramonium are considered as important narcotic drugs and narcotic drug act specially dealt with coca, hemp and opium.<sup>2</sup> So in this present study 3 main narcotic drugs *Ahiphena*, *Bhang*, *Datura* and their role in *Rasashastra* are discussed.

**MATERIAL AND METHODS:** The article is based on review collected from classical Ayurvedic texts, Modern books and Journals. The Classical texts from *Brahatrayer* and their respective commentaries, Sanskrit as well as hindi have been referred for this literary work.

Role of narcotic drugs in *Rasashastra* can be of two types. 1) Role in *Parada karma* 2) *Parada yogas*. Narcotic drugs are extensively used in *Parada yogas*, but minimum usage of narcotic drugs is observed in *Parada karma*.

*Ahiphena* (*Papavera somnifera*) is used in *sarana*, *marana*, *carana*, and *jarana samskara* of *parada* and *Bhanga beja* used in *jaluka* type of *bhandha* of *Parada*.<sup>5</sup> Narcotics drugs are extensively used in *Parada yogas* because of their fast acting action and likely given drastic action potential in the management of certain incurable diseases also. *Acharya Charaka* has explained how the *Madakari* drugs acts in the body. *Madaka dravyas* having the predominance of *Agni* and *Vayu mahabhoota*, having all the 6 *rasas* and possess the *gunas* like *teekshna*, *laghu*, *ushna*, *sukshma*, *amla*, *vyavayi*, *ashu*, *rooksha*, *visada* and *vikasi*.<sup>6</sup> These 10 *gunas* are exactly opposite to 10 *gunas* of *ojus* seated in *Hrudaya*. Hence should be used cautiously. Narcotic drugs counteract the *ojus* and exhaust it causing *ksobha* of *manas* and intoxicate the *buddhi*.<sup>7</sup> Anaesthesia by interfere with the normal metabolic activity of nervous tissue in a reversible manner by altering in some

way one or more of a series of chemical reactions whereby the cells derives its energy necessary for normal working by acting on the enzyme system.

Brief description of each narcotic drug will help in understanding their role in *Rasayogas*.

**Ahiphena:** *Varga:* *Upavisha*, *Kula:* *Ahipheha* (*Papaveraceae*) **Latin. Name:** *Papavera somniferum*.

**Chemistry:** Morphine molecule consist of a partially hydrogenated phenanthrene nucleus, an oxide bridge, a nitrogen containing chain attached in very unusual way to the phenanthrene nucleus. In the formula HO.C<sub>17</sub>H<sub>17</sub>ON.OH, 2 hydroxy groups can be seen, which are of basic importance for the action of morphine. They are known as phenolic and alcoholic hydroxyl groups.

**Guna-** *Laghu*, *Rooksha*, *Sukshma*, *Vikasi*  
**Rasa-** *Tikta*, *Kashaya*, **Vipaka-** *Katu*  
**Veerya-** *Ushna* **Prabhava** – *Madaka*.  
**Karma-** *Vedanastapaka*, *Madaka*, *Grahi*, *Kaphaghna*, *Raktastabhaka*, *Swedajanaka*, *Vishamajwaraghna*, *Sothaghna*, *Vajikara*.  
**Useful part-** *Phala Nirayasa* **Dose-** 30-125mg.<sup>8</sup>

**Shodhana:** Soaked in water, filtered through cloth and dried in fire. Later 21 *bhavana* with *ardraka swarasa*.<sup>9</sup>

**Therapeutics:** Morphine relieves pain, lessens appetite and retards digestion by direct action on stomach with sometimes nausea and vomiting, very useful in ulcer, cancer and gastritis produced by alcoholism. It is valuable in diarrhoea, dysentery, peritonitis and it relieves intestinal colic. Opium ointment allays the pain of anal fissures and piles. Morphine indicated in the treatment of coronary occlusion where they control excruciating pain of the disease, if gives marked relief to the spasm in whooping cough. With

therapeutic doses, morphine produce a sense of emotional well-being (euphoria) Euphoria eliminates the normal fear, panic withdrawal and flight response to pain. It is analgesic and hypnotic and antipyretic, demulcent, nutritive, astringent, sedative, narcotic, antispasmodic. Codeine is a feeble narcotic. It is effective in abdominal and pelvic pain, especially ovarian origin. It is a useful sedative in chronic cystitis and enlarged prostate. It soothes the hacking cough of phthisis and visceral neuralgia. Pethedine is used in bronchitis. It also used as antispasmodic in biliary and renal colic and as an analgesic in sciatica and other forms of neuralgia.<sup>8</sup>

**Bhanga:** *Varga-Upavisha kula-bhang* (cannabinaceae) **Latin. Name-** Cannabis sativa. **Chemical composition-** Tetrahydrocannabinol, Cannabidiol, canabinol, cannabin, psuedo-cannabinol and several terpenoids.<sup>12</sup> **Guna-** *Laghu, Teekshna, Rasa-* Tikta, **Vipaka-** *katu, Veerya-Ushna, Prabhava-Madakari Karma:* Madakari, vedanastapana, nidrajanana, aksepahara, pittasaraka, swasakasahara, Deepana, pachana, jwaraghna, sukrastambhaka. **Useful part:** Bhang, Ganja, charas

**Dose:** Bhang-25-250mg, Ganja-60-125mg, charas-30mg.<sup>8</sup>

**Shodhana:** Swedana in *dolyantra* with *godugda* for 1 *prahara*, washed with water and fried with *goghrita*.<sup>10</sup>

**Therapeutics:** It promotes digestion and causes constipation, relieves spasm of intestine, used in mania, migraine, hypertension, headache, insomnia and in neuroglia. It is antiemetic, mild analgesic, muscle relaxant, anticonvulsant and sedative.

**Datura:** *Varga- Upavisha Kula-Kantakari* (Solanaceae) **Latin.Name-** Datura metel

**Chemical composition-** Hyocyamine, atropine, hyoscine, norhyosamine, scopolamine.<sup>13</sup>

**Chemistry:** Belladonna alkaloids are organic esters formed by the combination of an aromatic acid and complex organic bases, either tropine or scopine. scopine differs from tropine only in having an 2 bridge between the atoms. This 2 bridge is the sole chemical difference between atropine and scopolamine.

**Guna-** *Laghu, Rooksha, Vyavayi, Vikasi Rasa-* Tikta, **Katu Vipaka-** *Katu Veerya-Ushna, Prabhava-* Madaka.

**Karma-** *Vedanasthapaka, jantughna, madaka, shulaprashamana, pittasravaka, hrudayotejaka, shukrastambhana, swaskasah ara, shukrastambhaka.*<sup>8</sup> **Useful part-** *Patra, puspha, beeja* **Dose-** *Choorna* 50-100mg, *datturasura*-0.3 -2ml. Action- Narcotic, anodyne, antispasmodic, dilates the pupils when locally applied, intoxicant, emetic, digestive, antispasmodic and healing.<sup>8</sup>

**Shodhana** – Swedana in *dolyantra* with *Godugda* for 1 *prahara* removed & washed later, dry properly.<sup>11</sup>

#### DISCUSSION:

**Parada karma-**The rationality behind using the bhang *beeja choorna* in the *Parada bandha* is to be researched out. So it has to be discussed. Bhang might be having the property of removing the *chanchalata, chapalata* and *durgrahatva gunas* of *parada*, converting it into some solid form, so that mercury particles will be in the bound form to make it fit for internal administration. Bhang *beeja* may nullify the toxic effect of *Parada*.<sup>14</sup>

**Parada kalpas:** Narcotic drugs, being an important ingredient among various *Rasayogas*, statistical inference have been taken out of 106 *Rasayogas*, which were selected randomly as a pilot study.

Among *Atisara yogas* like *Anandabhairava rasa*, *Atisara kutara rasa* etc, 13 *Rasayogas* have *Dattura* as its component, 12 of them contains *Bhang*, 9 *yogas* includes *Ahiphena*, 7 *yogas* has *Dattura* and *Bhang* combination, 2 of them *Dattura & Ahiphena* combination and 2 *yogas* contains *Ahiphena*, *Bhang* and *Dattura* out of 106 *yogas*.<sup>15</sup>

Among *Grahani Yogas* like *Kanaka sundara rasa*, *Krimi kutara rasa*, 8-8 *yogas* contains *Ahiphena* and *Bhang* individually, 7 *Yogas* having *Dattura*, 3 of them has the combination of *Dattura*, *Bhanga*, 2 of *Dattura*, *Ahiphena* combination.<sup>15</sup>

Among *Swasa kasa yogas* like *Ahiphena paka*, *kapha kutara rasa*, 7 *yogas* contains *Dattura*, 3 *yogas* of *Ahiphena*, 2 of *Bhang*, *Dattura*, *Ahiphena* combination.<sup>15</sup>

Among the *yogas* indicated in *jwara* like *Unmatta bhairava rasa*. *Abhra vati*, 14 of them included *Dattura* 7 of them are having *Bhang*, 5 have the combination of and *Bhang*, 1 each have *ganja and Ahiphena*.<sup>15</sup>

In case of *Agnimandhya yogas* like *Agnikumara rasa*, 3-3 *yogas* having *Dattura* and *Bhang* respectively, 2 having *Ahiphena*, 1 each has *Dattura*, *Bhang* combination and *Dattura*, *Bhang*, *Ahiphena* combination.<sup>15</sup>

In *Shoolayogas* like *Udarari rasa*, *Agnimukho rasa*, 4 *yogas* containing *Bhang*, 3 each of *Dattura* and *Dattura Bhang* combination are explained out of 106 *yogas*.<sup>15</sup>

In majority of *Atisara yogas* (9), *Ahiphena* is the key ingredient, followed by 8 *yogas* indicated in *Grahani*, then by *Swasa Kasa yogas*(3), *Agnimandya yogas*(2) and finally 1 *Jwara yoga*.

*Bhang* is used in the majority of *Atisara yogas* (12) followed by *Grahani* (8), then

by *Jwara yogas* (7), 4 *yogas* for *Shoola*, 5 for *Agnimandya* and 2 each *yogas* for *Swasa* and *Kasa*. *Bhang* here is not only used as the chief ingredient but also as the *bhavana dravya* in many *yogas* and also an *anupana* in some of them.

*Dattura* is used in the majority of *yogas* indicated in *Jwara* (14), followed by *Atisara* (13), then by *Grahani*(7), *Swasa* (7) followed by *Agnimandya*(3), *Shoola*(3) and *Kasa yogas* (3).

The role of narcotic drugs in *rasayogas* can be better understood by understanding the pharmacology of narcotic drugs.

In the intestine, opium reduces secretion, relieves pain and produces constipation. In the colon, it causes increases and prolong contraction of the circular muscles causing tonic rings and diminish or even abolish propulsive waves these effects suppress the normal peristaltic waves and retard the passage of the contents downwards. The spasm of the ileo faecal and sphincter allow the food material to remain for a longer time, thus helping more complete absorption of fluids and accumulation of faecal mass. Owing to the central effect the rectal sensation is diminished and the defecation reflex becomes sluggish. So it is valuable in all type of *Atisara*. *Grahani*. Narcotic drugs containing *Rasayogas* will have wonderful result and it has been told that it cures all types of *Atisara* including *asadhya* type of *Atisara*.

*Ahiphena* used in *Jwara yogasa* as it reduces temperature by loss of heat from dilated peripheral vessels. diaphoresis and parts from diminished movements by which less heat is formed. *Ahiphena* used in *Swasa yogas* as pethidine relaxes bronchial spasm and decreases bronchial secretions.

It is interesting to note that combination of 2 or 3 narcotic drugs are used in

*Rasayogas* to synergise the action and also to counteract the untoward effect of each other. The depression of respiratory and vagus center of morphine is antagonised by the atropine by the atropine, the constituent of *Datura* by stimulating the respiratory and vagus center.

In GID disorders, morphine used causes pain and discomfort due to increased tone and spasm of the sphincter of common bile duct and atropine can be usefully combined to counteract this effect. As *Ahiphena* having emetic property cannabim having antiemetic property can be used. This persistent vomiting often result from pyloric spasm is checked by atropine by paralyzing the vagus.

Statistical inference also reveals that almost all the *Rasayogas* containing narcotic drugs are *kajjali kalpas*. This may make the narcotic drug more potent by following ways. *Kajjali* acts as catalyst, and hence through its catalytic activity better absorption of herbal pharmacological molecules. *Kajjali* enhances the action of these narcotic drugs and also acts as Bio availability enhancer by its *Yogavahi* property.<sup>16</sup> Narcotic Drugs triturated under pressure with *kajjali* make enhanced storage, viability, 11/2 of the drug and also helps in sustained release of the drug with *kajjali* is beneficial as *kajjali* has anti IgE mediated reaction activity. It also scavenges circulating immune complexes due to long stay, sustained release and incremented dosing property. By immune enhancing activity and target cell protection activity. *Kajjali* minimizes the toxic effects of narcotic drug.

Addition of narcotic drug to *Rasayogas*, makes a new complex molecule which is different than narcotic alkaloid alone and hence the untoward effects of narcotic drug is checked by holistic *Rasayogas*.

This concept can be explained by understanding the chemistry of the alkaloids. Vigorous treatment of morphine with strong mineral with strong mineral acids will cause fundamental changes in the molecule. The oxygen bridge and the internal linkage of the N-containing chain are removed to give the structure of Apo morphine. By this narcotic potency is diminished and excitant action on CNS is enhanced. Likewise in the *Rasayogas* containing narcotic drugs, their structure are altered to neutralize the untoward effect and to enhance the desired affect making the *Rasayogas* more potent.

In the formula, 2hydroxy groups can be seen which are of basic importance for the actions of morphine. They are known as phenolic and alcoholic hydrogen groups. By the introduction of relatively simple chemical radicals into the hydroxyl groups, new derivatives can be synthesized. For ex: by the methyl substitution on the phenolic OH, methyl morphine is formed which is nothing but the codeine. This type of changes will occur to the narcotic drugs by various *samskara* done to the *Rasayogas* and desired effect is brought about and in turn making the *Rasayogas* more specific to the respiratory depressant and intestinal spasmodic actions, but the stimulant effects on the CNS are enhanced. On the other hand, when the alcoholic OH is masked, the narcotic and respiratory depressant properties of morphine are enhanced. The emetic properties of morphine appear to be connected with the free OH's; if either one of the hydroxyl groups is masked, vomiting is less pronounced. When phenolic OH is added narcotic effects are enhanced. Ayurveda formulations are designed in such a way that masking and adding of hydroxyl groups of opium alkaloids are done. Thus



these narcotic drugs widen the therapeutic effects of the *Rasayogas*.

The selective action of atropine on autonomic structures resides not in the atropine base, but in the ester of tropic acid. The presence of a free hydroxyl group in the acid portion of ester is also important. The atropine and scopolamine are more parasympatholytic and more gangliolytic and are devoid of action on CNS. The presence of an asymmetric 'C' atom in tropic acid allows for optical activity and stereoisomerism. Scopolamine is as powerful in the peripheral autonomic effects as atropine and it has more specificity for autonomic effector organs. This Oxygen Bridge is altered to enhance the effect of *Datura*. So *Datura*'s action is doubled along with the suitable *Rasadavyas* instead using it alone and selective action makes the *Rasadavyas* to reach they required target organ.

Atropine and scopolamine exhibit highly selective blocking action on effector organs innovated by post ganglionic cholinergic nerves. This action makes the *Rasadavyas* in the *rasayogas* to subdue their toxic / untoward effects by blocking the undesired receptors.<sup>13</sup>

#### CONCLUSION:

*Shodita/Samskarita* narcotic drug is used in *Rasayogas*. Hence *Ayurvedic* narcotic drug is different than synthetic one. Narcotic drug can be grouped under *upavisha varga*. They possess toxic properties. The *ojovipareeta gunas* are modified by *Rasayoga samskara*. Narcotic drugs help the *Rasayogas* to cross the barriers in pharmacological activities. Narcotic drugs make the *Rasadavya* quickly absorbable and spread fast all over the body by their *Vyavayi and Vikasi Guna*. Narcotic drugs still minimal dose of *Rasa* drugs. Narcotic drug lifts the effect of

general *Rasayoga* mainly to CNS, ANS and PNS. Narcotic drug addition to *Rasayogas* makes the compound to specifically target the organ.

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