



A CRITICAL REVIEW ON PARADA POISONING AS PER MODERN & AYURVEDIC SCIENCE

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ABSTRACT

Agada Tantra or toxicology is a branch of *Ashtanga Ayurveda* which includes the science of poisons^[1]. It is originated from the school of toxicology, which was founded and run by *Acharya Kashayapa*. It deals with various natural and artificial toxic substances and poisons in detail along with their antidotes, the signs and symptoms, fatal doses & management of poisons of various poisons^[2]. It also deals with medicine in relation to the law, legal aspects of medical ethics and standards.

In Ayurveda, medicines are generally come under 3 categories i.e, herbal origin, animal origin & mineral origin and are cumulatively used to attain the happy and healthy life. Herbal products were extensively used in the classic age in all branches of Ayurveda. Metal and minerals were also used as a part of therapeutic agent but less frequently because they have toxicity. Most of the metals are present in solid form but parada are in semi-liquid form, it is exceptional. Parada is the metal that is used most frequently in various Ayurvedic medicine specially *Rasayoga* in the form of its bhasma. In Ayurveda various doshas are mentioned for Parada in *Rasagranthas* which is seen in Ashodit Parada. It is also mentioned that shudha Parada is not toxic and shows Rognashak property and act as medicine. So in the present era the toxicity of parada is produced by Ashudh form of parada. Thus, this article compiles all the various aspects of parada as per acharyas mentioned in ancient scriptures.

Key words: *Agada Tantra, Ayurveda, Parada.*

I. INTRODUCTION

In ancient literature, Rasa or Parada (Mercury) has been described to be of divine origin and claimed to be related to Lord “Shiva or Hara”. Medical science acknowledge the power of parada for controlling hyper tension, asthma and enhance sexual ability. When parada, which is impure is purified and consecrated by various processes, it become solid and is known as shuddha parada . Many quotations provide the importance of Parada (mercury) in Rasa texts as Rasa Chikitsa. For ousadhi purpose, the process of Shodhana is having a great importance and a wide range of purification methods are described for each metal & mineral as well as for Visha and Upavisha (toxic substances). Rasashastra dravyas include minerals and metal which are mainly Bhumiya in origin, Parada is also one among them. In rasashastra, the extra ordinary importance of Parada is easily seen as the whole branch is named after Parada (synonym :rasa). The form of parada used indicates its toxicity and utility and due to which shodana is necessary . Even though the literary meaning of ‘Shodhana’ is purification but shodhana is a samskara (process or procedure) which essentially brings out modifications or alteration in properties along with purification. The process reduces the toxic effect, eradicate physical and chemical impurities. It enhances therapeutic value of the drug, converting the material for further processing like Marana (incineration).When parada, which is impure is purified and consecrated by various processes, it become solid and is known as shuddha parada The classical text *Rasaratna samuchchaya* states that “*Siddhae rase Karishyami Nirdraaridrayam agadam jagat*”. In other words, if parada is consecrated and converted in to purified form, then all ailments and poverty of the world can be vanished.

II. AYURVEDIC LITERATURE ON PARADA

SYNONYMS AND VERNACULAR NAMES OF PARADA^[3]

- Sanskrit : Parada
- Hindi : Para
- Marathi : Para
- English : Parada
- Latin : Hydragyrum (Hg)

SHUDDHA PARADA SWAROOP^[3]

The parada having blue tinge inside and bright outside, and having lusture of sun as seen as noon, is said to be best, whereas, the Parada which has smoky grayish or dull white color or strange mixed color should not be used in different rasa karmas.

In modern chemistry a similar explanation regarding parada states that parada is a silver white liquid metal, with slight bluish tinge. In thin flims, it emits violet light.

TYPES OF PARADA^[3]

According to the origin of parada , it is classified in to 5 types viz:

- Rasa,
- Rasendra,
- Suta,
- Parada and
- Mishraka.

The varieties of mercury based on colour are listed in Table No. 1. Most of the raw materials (metal and minerals) are extracted from earth. So there is every chance of mixing of impurities, toxicity, heterogeneous and unwanted substances to a large extent. Shodhana is indicated to induce certain qualities, which are essential for the safe and easy assimilation of the material in the living body.

Table No. 1 :Varieties of Parada based on Colour^[4]

SL . NO.	VARIETY	COLOUR	IMPURITIES	USES
1	<i>Rasa</i>	Rakta	Which is free from all types of impurities	Rasayana
2	<i>Rasendra</i>	Shyava	Free from impurities	Rasayana
3	<i>Soota</i>	Ishat Peeta	With impurities	Dehasidhi, Lohasidhi
4	<i>Parada</i>	Shweta	With impurities	Sarva Rogahara
5	<i>Mishraka</i>	Mayura Chandrika Varna	With impurities	Sarva siddhidayaka

PARADA GATI

Parada has 5 types of gati which is considered to be the main cause of loss of parada while manufacturing parada containing kalpas or while doing parada shodhana. They are:

- 1) Jala Gati
- 2) Hansa Gati
- 3) Mala Gati
- 4) Dhooma gati
- 5) Jeeva Gati or Aadrushya Gati

DOSHAS OF PARADA^[5,6]

Dosha (impurities) of Parada are classified as follows:

- Naisargika Doshas (natural impurities),
- Yougika Doshas (physical impurities),
- Aoupadika Doshas (chemical impurities in the form of coating).

AYURVEDIC PHARMACOLOGICAL AND THERAPEUTIC PROPERTIES OF PARADA

- Rasa: Shadarasa
- Guna : Snigdha, Sara, Guru
- Virya : Ushna
- Vipak : Madhura
- Prabhava:Yogavahi,
- Karma: Yogavahi, Rasayana, Balya, Vrisya etc.

It is said by ancient sages that if parada is free from all doshas, then it is capable of eradicating death and senility.

VYADHI PRABHAVA

- Kushtahar, Rasayana, Amruta, Sarvarogahara, Vataroga, etc..
- In **Bhavaprakash**, important properties of parada are described as:
 - It has a soothing effect upon the human system (Snigdha)
 - It corrects the imbalance of three Doshas (Tridoshaghna)
 - It is efficacious in preventing diseases and arrival of premature old age (Rasayana)
 - It serves to heighten the medicinal properties of anything with which it is compounded (Yogavahi)
 - It is the best aphrodisiac (Mahavrishya)
 - It always increases the strength of the eyes (Sadadrishtibala Parada)

- It cures all sorts of diseases especially skin diseases.
- In **Rasendra Sara Sangraha**, it has been mentioned that Parada increases Budhi (intelligence), Smiriti (memory power), Prabha, kanti (lusture), Bala (strength of the body). These properties of Rasa are only obtained when it is used in processed form.

III. CONCEPT OF SHODHANA

The various poisonous plants and metals are described in ancient treatise of Ayurveda are still being used widely in a number of diseases after processing with proper *Shodhana*. Ayurvedic physicians successfully employed these drugs after proper *Shodhana* to the patients for their illness. The concept of *Shodhana* was mentioned for the first time in Charaka Samhita in the context of Danti Dravanti Kalpadhyaya. Acharya Vagbhata also mentioned *Shodhana* of drugs of plant origin in detail as well metal purification. It is reported that Aconite (*Vatsanabha*) purified by cow urine is converted to cardiac stimulant, whereas raw Aconite is cardiac depressant. It is clearly mentioned in 'Bhava Prakasha' that the bad/toxic effects attributed to '*Ashodhita Vishas*' (unpurified poisonous substances) are minimized when these are used after being subjected to *Shodhana*. According to Ayurveda, *Shodhana* is not only the process of detoxification, but also a process of *Samskara* (potentiating the therapeutic efficacy) of such drugs. It also reduces the side effects.

SODHANA OF PARADA^[7]

- Types of Shodhana (purification) explained are :
 - a. Samanya Shodhana (General method of purification),
 - b. Vishesha Shodhana (Specific method of purification).

Different methods adopted for Samanya Shodhana of Parada are Parada added with below specified drugs in the quantity of 1/16th part. The mixture is added with required quantity of Ghritakumari swarasa and triturated thoroughly for a day (8 hours). Later the mixture is carefully washed with Kanji (fermented liquid) to obtain mercury free from all naisargika and Sapta Kanchuka dosha^[8]. The table no. 2 shows different drugs used for the purification of mercury.

Table No. 2 : Different drugs for Purification of Mercury

SL. NO.	DRUGS ADDED	TO PURIFY
1	Grahadhuma, Ishtika churna (brick powder), Haridra churna (turmeric powder) and finely cut wool of sheep	<i>Naga dosha</i>
2	Indrayana, Ankola and Haridra churna	<i>Vanga dosha</i>
3	Citraka Mula churna	<i>Agni dosha</i>
4	Aragwadha Twak churna	<i>Mala dosha</i>
5	Krsna Dhatura Panchanga or Bija churna	<i>Capala dosha</i>
6	Triphala churna	<i>Visa dosha</i>
7	Trikatu churna	<i>Giri dosha</i>
8	Gokshura churna	<i>Asahyagni dosha</i>

Along with the above said references , Rasa Tarangini text has explained the most essential six general method of purification of mercury to make it fit and potent for therapeutic and pharmaceutical use . According to other authors Vishesha Shodhana is considered as Samskara of Parada. Parada should be triturated with Lasuna and Saindhava Lavana on a Tapta Khalva yantra for 7 days^[9] . Parada should be triturated with Nagavalli Swarasa, Ardraka Swarasa, Ksharatraya for 3 days and washed with water. Parada will be shining like Mukta (pearl) and devoid of Sapta doshas^[10] . The Parada which is extracted by Urdhwa Patana Vidhi from Hingula is devoid of Sapta Kanchuka Doshas is subjected to Shodhana. Parada's 1/16th part of Haridra Churna and Nimbu Swarasa Q.S is taken in a porcelain dish and triturated for 2 days. After drying, it is filtered through four folded cloth and Parada is procured^[11].

DRUGS MENTIONED FOR SAMANYA SHODHANA OF PARADA^[12]:

Parada Shodhana has to be carried out for 3 to 7 days, in any of the following drugs to get rid of Parada doshas. Sudha (lime powder), Lashoona, Saindhava, Gritakumari Swarasa, Chitraka kwatha, Rakta Sarshapa, Bhrahati kwatha, Triphala kwatha, Nagavalli Swarasa, Ardraka Swarasa, Yavakshara, Tankana, Sarjikshara, Haridra, Ishtika churna etc.

VISHESHA SHODHANA^[13,14]

Shodhana to Parada removes the Visha, Vahni, Mala, Naga, Vanga, Chapalya, Giri, and Asahyagni etc; Dosha (impurities). This procedure was intended for strengthening and potentiation of Parada and is achieved by Astadasha Samskaras. The loss of Mercury is explained in Rasashastra text as Jala gati (loss by water while washing), Mala gati (loss of mercury with impurities), Hamsa gati (loss while shifting mercury from one vessel to other), Dhuma gati (loss through vapours) and Jiva gati (loss of mercury like a soul). In *Rasashastra* maximum times parada is used along with sulphur. Thus forms parada sulphide which is safest. But still in whichever form parada is used it should be handled carefully as its misuse may lead to toxicity.

IV. AYURVEDA MANAGEMENT OF PARADA VISHAKTATA

There are two types of poisons that have been described in the *Agadatantra*, the Natural poisons and the Artificial poisons. The natural poisons are classified as inanimate (*Sthaavara*) and animate (*Jangama*). Inanimate poisons or the *Sthavara* comprise of poisons that have plant origin and toxic minerals, metals or metal ores that are found inside the earth. The use of metals in traditional medicines is very often seen as matter of concern these days, especially the *Bhasma* preparations which are always under stringent observations for containing highly reactive inorganic elements such as mercury, lead, arsenic and others. If any *Bhasma* in medicine is not prepared properly or *Shodhana* procedure is not done properly, it acts as a poison. To indicate its toxic potential, *Ashtamahadoshas* (eight major ill effects) have been quoted in classics and due emphasis have been given to its *Shodhana* procedure. *Paradabhasma* (Mercury) is used in various Ayurvedic preparations. If it is not prepared properly or *Shodhana* procedure is not done; it acts as a poison.

According to Ayurveda, *Nidana Parivarjan* i.e. to avoid exposure of parada contaminated food, medicine etc. is one of the ways to prevent its poisoning. Sometimes, history of other medication especially Ayurvedic and Siddha medicine taken by the patients reveals the history of mercury poisoning, as it is important to know the route cause for the *Hetu.*, so it is not only necessary to know the source of mercury exposure but also to know the various factors which increases mercury absorption for proper diagnosis as well as for treatment purpose. *Visha Chikitsa* describes the action of harmful elements on body functions and how it can destroy the body tissues. Specific antidotes for poisons were prescribed for nullifying its effects. Ancient texts such as Charaka Samhita, Susrutha Samhita and Ashtanga Sangraha offer exhaustive information. Ayurveda described Chaturvimshati Upakrama (Twenty-four modalities) by Acharya Charaka. *Samshodhan Chikitsa* by doing *Panchakarma* on body (Purification procedure), It includes *Vaman*, *Virechan*. Purgation or both able to excrete the *Dushi Visha* from human body by means of purification, *Vaman* (Induced Emesis) and *Virechan* (Induced Purgation) expelling the poison, toxin & vitiated *Dosha* from stomach through anal route. *Prativisha Chikitsa* is specially indicated for management of poison in mercury poisoning. *Raktamokshana* (Bloodletting), As air blows the fire, blood is the major media which blow up poison. Hence bloodletting eliminates the poison from blood and minimizes the manifestation of poison. It can be done by *Pracchana* (multiple incision), *Shruna* (horn like shape), *Jalouka* (leech therapy), *Alabu* or *Siravedha* (venesection). Acharya Sushruta have also described *Ajeyghritapana* and *Amrut Ghritapana* in *Hridayawaran Chikitsa*. *Vishaghna Mahakashaya*, *Kalyanak Ghrita*, *Narayana Churna*, *Shilajatuavataka*, *Mrutasanjivana Agada* are described in *Sutrasthana* of Charaka Samhita for all type of *Visha Chikitsa*^[15].

In case of *Jirna Parada Vishaktata*,

- *Virechana* : Administering of Snuhi Vati (Snuhi Kshira 125 ml + Saindhava Lavana) with triphala kwath.
- *Raktamokshana (Sarvadehika)* : By *virechana & raktamokshana*, the absorbed parada visha is eliminated.
- *Aruchi , Agnimandya* : Appetizers (like Trikatu , Saindhava Lavana, Shunthi, Chitraka Chavya ,etc) should be used .
- *Anidra* : Nidrakar Yoga (Sarpagandha Vati , Aswagandha Avaleha, Tagaradi Churna ,etc) are recommended by ancient sages in their scriptures.
- *Headache* : Shir Shuladi Rasa, Vajradi Vati,etc should be used.

V.ACCORDING TO MODERN VIEW^[16]

Mercury is considered as a heavy metal containing various impurities and causes toxic and adverse effect to the body hence purification of such metal is must. Mercury has

- Element symbol :Hg
- Atomic Number : 80
- Atomic weight : 200.592
- Boiling Point : 356.6 °C
- Melting Point : 38.9 °C.
- Electrons : [xe] 4f14 5d10 6s2
- Appearance : Liquid metal

The Toxic compounds of mercury are as follows:

- a) Chloride : Hg_2Cl_2 , Hg_2Cl_3
- b) Sulphide : Hgs
- c) Oxide : Hgo
- d) Organic mercury : Dimethyl & Diethyl Mercury

In general , Pure Metallic Mercury is not poisonous if taken orally because it is not absorbed but the compounds are very toxic.

Mercury has three forms ,viz.,

- **Elemental Mercury** is heavy, silver liquid and volatile at room temperature. It is non-poisonous, if swallowed, since it is poorly absorbed from the GIT. But vapor can give rise to acute toxicity.
- **Inorganic salts** toxicity occurs in several forms; metallic Mercury (Hg), mercurous Mercury (Hg^{1+}), or mercuric parada (Hg^{2+}).
- **Organic compound** are found in three forms: aryl and shorts: and long -chain alkyl compounds. Organic salts are better absorbed from the GIT than the inorganic salts because of intrinsic properties, such as lipid solubility. It can cross the blood: brain barrier to accumulate in the brain, hence CNS effects are more predominant. In contrast, the kidney is the main storage organ for inorganic compounds.

Mercury exposures occur chiefly through inhalation of elemental mercury vapor via occupational or dental amalgam (silver filling because of its color). **Mercurialism** is poisoning resulting from the ingestion or inhalation of mercury or its compounds. It can be acute or chronic.

THERAPEUTIC DOSE

- **FATAL DOSE :** 1-1.5gm of mercuric chloride, 10- 60 mg/kg of methyl mercury , 10mg/m³ of mercury vapor & 1.5 -2 gm of mercurous chloride.
- **FATAL PERIOD :** Few hours but can delayed for 3-5 days.

USES^[17]

- **Medicine:** Disinfectant, dental amalgam, purgative and diuretic, and earlier used in the treatment of syphilis. A controversial source of organic parada exposure is *thimerosal*, a preservative used in vaccines (DTP and hepatitis B) to prevent bacterial contamination.
- **Industry:** Manufacture of thermometer, barometer, calibration instruments, fluorescent and parada vapor lamp, electrical equipment, explosives and fireworks.
- **Miscellaneous:** Electroplating, photography, insecticide, germicide, fingerprint powder, paints and embalming fluid.

ACTION^[18]

- a. Mercury binds with sulfhydryl groups resulting in enzyme inhibition and pathological alteration of cellular membranes.
- b. Elemental mercury and methyl mercury are toxic to the CNS. Metallic mercury vapor is also a pulmonary irritant. Inorganic mercury salts are corrosive to the skin, eyes, and GIT, and nephrotoxic. Inorganic and organic forms may cause contact dermatitis.

ABSORPTION AND EXCRETION

- It is absorbed through the GIT and respiratory tract , causing irritation and inflammation to mucus membrane of GIT & it depresses cellular enzymatic mechanism.
- After absorption, mercury get deposited in all tissue, particularly in the liver, kidney, spleen and bones. When inhaled, the maximum concentration occurs in the brain. Mainly excreted through the kidney (urine), liver (bile) and colonic mucous membrane (feces).
- It passes rapidly to the fetus through placental circulation.

ACUTE POISONING^[19]

SIGN AND SYMPTOMS (INGESTION)

- **GIT :** Metallic taste, feeling of constriction in the throat, hoarse voice.
- Mouth, tongue and faces become corroded, swollen, and mucous membrane appears grayish white.
- Hot burning pain from the mouth to the stomach, and pain radiating over the abdomen followed by nausea, retching and vomiting.
- **RENAL :** Oliguria, albuminuria and hematuria ending in renal failure or nephritic syndrome.
- **CVS :** Hypertension, tachycardia, difficulty in breathing and circulatory collapse.

SIGNS :: SIGNS OF DEHYDRATION AS PER SEVERITY WILL FOUND

- Tongue : Dries,
- Skin Tourger : Loss,
- Eyes : Shrunken ,
- Ant. Fontanel (Infants): Depress.
- Pulse : Feeble & Tachycardia ,
- B.P : Hypotension ,
- Respiration : Sighs.
- Death due to Hypovolumic Shock & Cardiac Failure.

METALLIC FUME FEVER (INHALATION)

- Cough, Dyspnoea , Fever with chill , headache.
- Gastro-Intestinal disturbance with metallic taste.
- Blurring vision.
- Non Cardiogenic Pulmonary Edema , Convulsion & Death in severe cases.

CHRONIC POISONING^[20]**Chronic poisoning results from:**

- Continuous accidental absorption by workers.
- Excessive therapeutic use.
- Recovery from large dose.
- If an ointment is used as an external application for along time.

SIGN AND SYMPTOMS (INGESTION)

- Chronic intoxication from inhalation of mercury vapor produces: Tremor, neuropsychiatric disturbances and gingivostomatitis.
- Chronic poisoning with inorganic mercury compounds is characterized by non-specific early symptoms such as anorexia, insomnia, abnormal sweating, headache, lassitude, tremor, gingivitis, hyper salivation, loosening of teeth with blue line in the gum, jaundice, increased urination.

SPECIFIC DISEASES / FEATURES :

- **Mercuria Lentis :** Discoloration of anterior capsule of lens of eye due to mercury deposition.
- **Danbury Tremor & Hatter Shake :** It occur first in the hand, then progresses to the lips and tongue, and finally involves the arms and legs. Tremor is moderately coarse and is interspersed by jerky movements.

In the advanced stage, the person is unable to dress himself, write legibly or walk properly. They are also called hatter's shakes or glass blower' shakes, as they are common in person working with mercury in glass: blowing and hat industries

- **Mercurial Erthrisms & Mad as Hatter :** Excitability , Memory loss , Insomnia & Delirium.
- **Acordynia or Pink Disease :** It is seen mostly in children due to idiosyncratic hypersensitivity reaction to repeated ingestion or contact with mercury.
 - **Sign and symptoms:** There is pinkish morbilliform / acral rashes, desquamation of palms and soles, pain in the extremities, flushing, itching, swelling, tachycardia, hypertension, excessive salivation or perspiration, weakness, irritability, photophobia, anorexia, insomnia, and constipation or diarrhea.
- **Non Specific :** Anorexia , Insomnia , Sweating , Lassitude & Headache.

VI.DIAGNOSIS

- Acute mercury poisoning can be detected by measuring blood levels, whereas urine and hair analysis help confirming chronic exposure.
- Urine and blood mercury levels are assessed by atomic absorption spectrophotometer. Mercury concentration of hair is best assessed by neutron activation.

VII.TREATMENT

- In case of inhalation, the victim is immediately removed from source of exposure and supplemental oxygen is given, and observed for the development of acute pneumonitis and pulmonary edema.
- Eggs whites, milk or animal charcoal to precipitate mercury. Emesis is not induced because of the risk of serious corrosive injury.
- Gastric lavage with 250 ml of 5% sodium formaldehyde sulfoxylate. About 100 ml of this solution is left in the

stomach. Lavage can be done with egg:white solution or 2:5% solution of sodium bicarbonate.

- High colonic lavage with 1:1000 solution of sulphoxylate twice daily. Whole bowel irrigation may be done.
- BAL is the traditional chelator of choice(10% solution in oil, 3:5 mg/kg IM every 4 h for 2 days, tapered to 6 hourly for 1 days and then 12 hourly for 7 days), but oral agents are preferable.
- There is no role for dialysis, hemoperfusion or repeat dose charcoal in removing metallic parada or dialysis may be required in case of renal failure.
- Maintain electrolyte and fluid balance.
- Symptomatic treatment.

VIII.POSTMORTEM FINDINGS^[21]

- Body looks emaciated.
- **GIT:** Mucosa shows inflammation, congestion and grayish corrosion. Ulceration or even gangrene of large intestine may be seen.
- **KIDNEY:** Acute proximal tubular damage and glomerular degeneration or glomerular nephritis may be seen.
- **LIVER:** Congested and shows cloudy swelling or fatty change.
- **HEART:** Fatty degeneration and sub endocardial hemorrhage.

External : Emaciated body with pale skin. Erosion of oral mucosa, gum of lower jaw may show bluish gray lines of pigment deposition, along with loosening of teeth.

Internal: Inorganic mercury poisoning may cause cerebral infarctions, pneumonia, renal cortical necrosis and disseminated intravascular coagulopathy.

IX.CHEMICAL ANALYSIS:

- **Common viscera :**
V1: Stomach whole+ Stomach content (100 ml) + small intestine (30 cm)
V2 : Liver ½ kg + Spleen ½ kg + Kidney 1/2kg each
- **Specific viscera :** V3 :: Shaft of Long Bone (10 cm) + Plucked Scalp Hair (5gm) + Finger Nail
- **Preservatives :** Rectified Spirit.

X.MEDICO-LEGAL ASPECTS^[22]

Suicidal and homicidal poisoning is rare. However, cases of deliberate intravenous or subcutaneous metallic mercury injection have been reported.

- Mercuric chloride causes accidental poisoning when it is widely used as disinfectant and antiseptic, contraceptive vaginal tablets for anti-syphilitic treatment.
- Phenyl mercuric acetate jelly leads to poisoning when used as a contraceptive.
- Accidental ingestion may occur from broken thermometers.
- Accidental ingestion of antiseptic solutions containing mercuric chloride / cyanide.
- Soluble salts as vaginal douches.
- Absorption of mercurial preparation applied to the skin.
- Intravenous administration of organic mercurial's, such as diuretics.

XI. CONCLUSION

Administration of any drug with improper or improper use of any drugs as well as accidental ingestion / inhalation of parada or mercury results appearing poisonous signs & symptoms, it may be chronic or acute nature. Chronic exposure to parada can adversely lead to brain cell death and results in impaired fine motor skills, memory and focus. Parada is obtained from the earth's crust naturally; it is mixed with some unwanted physical & chemical impurities. So it is essential to carry out some procedures before making use of mercury. Mercury is an inorganic metallic poison has fascinated people for millennia, as a heavy liquid metal. It is always found in combined form in nature. It has no known biological role, but is present in everything and widespread in the environment. Every mouth full of food we eat contains a minute of mercury. The diseases causing effect of Mercury is due to the intake of impure mercury present in soil, water and air. Its consumption in impure form causes various ailments as discussed above. As per Ayurveda, Shodhana is not only the process of detoxification, but also a process of samskara (potentiating the therapeutic efficacy) of such drugs. Proper purified drugs are very less likely to harm however it should be used only indicated medically by expert physician. But various Sanskar conducted on it render it poison less and hence various preparation of Ayurvedic medicines utilize it. However many uses of mercury are being carried out by modern scientists and still under review.

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