



A SCIENTIFIC DRUG REVIEW ON PUNARNAVA MANDUR

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<https://doi.org/10.46607/iamj2309112021>

(Published Online: November 2021)

Open Access

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Article Received: 17/10/2021 - Peer Reviewed: 31/10/2021 - Accepted for Publication: 06/17/2021



ABSTRACT

Punarnava Mandura a classical Herbo mineral formulation is available on the market either in tablet form or in Churna form and is frequently used for Anemia, Low Platelet count, Low RBC count, swelling around Joints, Generalized Swelling, Gout and other end toxins accumulation. It is also a diuretic and is useful in renal disorders. In renal failure, it is used with *Mutrakrichantak Churna* for getting good results. Used with it. This medicine is more commonly used in North Indian Ayurvedic practice. Clinical research involves investigating proposed medical treatments, assessing the relative benefits of competing therapies, and establishing optimal treatment combinations. It is the most fruitful line of approach for methods of diagnosis and treatment as described in Ayurvedic literature. Anaemia is the most common indicator used to screen for iron deficiency, the terms anaemia, iron deficiency, *Pandu roga* is known since Vedic period and Iron preparations for the treatment of *Pandu Roga* has also been well known since ancient times. Punarnava as name designates regeneration; it may help to decrease, the work of Kidneys as it has *Mutral* properties.

Keywords: *Punarnava Mandur*, herbomineral, Anemia.

INTRODUCTION

Mainly Ayurveda makes use of *Yuktivyapasraya Chikitsa*. Acharya Charaka says that the art of prescription depends on knowledge of dosage form and time, and this art, in turn, depends on success, hence the skillful physician stands ever superior to those possessing merely theoretical knowledge of drugs. *Oushadha jnana* is included in the very basic trisootra of Ayurveda. Ayurveda is the science of *Hetu* (causes), *Linga* (signs and symptoms) and *Oushadha* (medication), the supreme refuge of both *Swastha* and *Athura* (healthy and ailing), *Shaswatha* (eternal) and *Punya* (holy). Acharya Charaka defines *Dravya* as the one which is the *Ashraya* (substratum) of *Karma* (action) and *Guna* (qualities) and is the *Samavayi Karana* (co-existent) cause. Punarnava Mandura a classical herbomineral formulation is available in the market either in tablet form or in churna forms and is frequently used for Anemia and other disorders.

Therapeutic Indication: Prepared PunarnavaMandura is used in *Pandu, Sotha, Udara roga, Anaha, Sula, Arsa, Krimi and GulmaVyadhi*. Dose is 250-500 mg once or twice a day with suitable *Anupana*, Honey, Lukewarm water, *Takra* etc. after food or as directed by physician.

Punarnava Mandura has described by Bhava Prakashin *Pandu-Kamala-halimak Rogaadhikara*. Charaka Samhita Acharya Charaka has described Punarnava Mandura in *Pandu Roga Chikitsaadhayandi* in this text *Suddha Mandura Churna* is taken in place of *Mandura Bhasma*. It is indicated with *Takra* in *Pandu Roga, Pliha Roga, Bhaishajya Ratnavali Brihada Rasa Raja Sundar Astanga Samgraha*, *Abhinava Chintamani* has described Punarnava mandura in *Pandurogadhikara*. In *Rasa Kamdhenu*, Punarnava Mandura has described in *Shuladhikara* and total 6 ingredients have taken. Only *Punarnava* and *Mandura* are the same out of 21 ingredients described in almost all classics. This is indicated for *Tridoshaja Parinama Sula*. *Vangasen Samhita* or *Chikitsasara Samgraha* has described Punarnava Mandura in *Parinama Shula Rogadhikara*. Here almost the same ingredients are taken as men-

tioned in *Charaka Samhita* or *Bhaishajya Ratnavali* except for *Dantimula* and *Indrayava*.

Description according to the composition of Punarnava Mandura:

PUNARNAVA

Botanical Name: *Boerhaavia diffusa*

Family: Nyctaginaceae

Description: Consists of dried, matured whole plant, trailing herb found throughout India and collected after the rainy season, the herb is diffusely branched with stout rootstock and many long slender, prostrate or ascending branches. Alkaloid is punarnavine.

Properties and Action: Rasa is *Madhura, Tikta, Kasaya, GunaUsna, vipaka, madhura* and karma is *Anulomana, Sothahara, Kaphaghna, Dipana, Vatakara, Pittahara*.

Important Formulations- Punarnavastaka Kwatha, Churna, Punarnavasava, *Punarnavadi Mandura*, *Sukumara Ghrta*, *Sothaghna Lepa*.

Therapeutic uses- *Sotha, Pandu*

TRIVRIT

Botanical Name: *Operculina turpethum*

Family: Convolvulaceae

Description: It consists of dried root of the plant, a large perennial twiner with milky juice and fleshy roots found growing nearly throughout the country, ascending to 900 m.

Properties and Action: *Rasa* are *Madhura, Katu, Tikta, Kasaya, Guna* are *Ruksa, Laghu* and *Tiksna, Virya* is *Usna, Vipaka* is *Katu*, *Kaphapittahara, Sukhavirecanaka, Pittahara, Jwarahara* of *Trivrit*.

Important Formulations: *Hrdyavirecana Leha, Aswagandharista, AvipattikaraCurna* and *ManibhadraGuda*.

Therapeutic Uses *Malabandha, Gulma, Udara Roga, Jwara, Sopha, Pandu, Pliha, Vrana, Krimi, Kustha, Kandu*.

SHUNTHI

Botanical Name: *Zingiber officinale*.

Family: Zingiberaceae

Description: Consists of the dried rhizome of *Zingiber officinale* Roxb. (Fam. Zingiberaceae), Widely

cultivated in India, rhizomes dug in January-February, buds and roots removed, soaked overnight in water, decorticated, and sometimes treated with lime and dried.

Constituents: Essential oil, pungent constituents (gingerol and shogaol), resinous matter and starch.

Properties and Action: *Rasa* is *Katu*, *Guna* are *Laghu*, *Snigdha*, *Viryais Usna* and *Vipaka*, *Madhura* and *karmas* (action) are *Anulomana*, *Dipana*, *Hridya*, *Pachana*, *Vatakaphapaha*, *Amadoshahara*

Important Formulations: Saubhagyasunthi, Trikauchurna, Saubhagya Vati, Vaisvanara Churna.

Therapeutic Uses - *Agnimandya*, *Svasa*, *Adhmana*, *Amavata*, *Pandu*, *Udararoga*

VIDANG

Botanical name: *Embelia Ribes*

Family: *Myrsinaceae*

Description: Consists of dried mature fruits of *Embelia ribes*, large scandent shrub with long slender, flexible branches, distributed throughout hilly parts of India up to 1600 m.

Properties and Action: *Rasa* are *Katu*, *Tikta*, *Viryas* are *Usna*, *Laghu*, *Ruksa*, *Tiksna*, *Viryas* are *Ushna*, *Vipaka* is *Katu*, and *karma* are *Anulomana*, *Dipana*, *Krminasana*, *Vatakaphapaha* Important formulations are *Vidangarista*, *Vidanga Lauha*, *Vidangadi Lauha* and therapeutic uses are *Sula*, *Krmiroga*, *Udararoga*, *Adhmana*.

CHITRAKA

Botanical name: *Plumbago zeylanica*

Family: *Plumbaginaceae*

Description: Citraka consists of the dried mature root of *Plumbago zeylanica*, a large perennial scandent shrub, found throughout India in wild state and important constituent is *Plumbagin*.

Properties and Action: *Rasa* is *Katu*, *Guna* are *Laghu*, *Ruksa*, *Tiksna*, *Viryas* are *Usna*, *Vipaka* is *Katu* and *Karma* are *Sothahara*, *Dipana*, *Grahi*, *Pachana*, *Kaphavatahara*, *Arsohara*, *Sulahara*.

Important Formulations- *Citrakadi Vati*, *Citrakahruti*, *Citrakadichurna*

Therapeutic Uses- *Agnimandya*, *Grahani Roga*, *Arsa*, *Udara sula*, *Gudasotha*

DARUHARIDRA (Stem)

Botanical Name: *Berberis aristata*

Family: *Berberidaceae*

Description: Consists of the dried stem of *Berberis aristata* an erect, spinous, deciduous shrub, usually, 1.8-3.6 m in height found in the Himalayan ranges at an elevation of 1000-3000 m, and in the Nilgiri hills in South India.

Properties and Action *Rasa* is *Tikta*, *Guna* is *Ruksa*, *Viryas* are *Usna*, *Vipaka* is *Katu*, and *Karma* are *Stanya Sodhana*, *Stanya Dosahara*, *Dosa Pachana*.

Important Formulations: *Bhrangaraja Taila*, *Asvagandhadyarista*, *Khadiradi Gutika*, *Khadirarista*, *Jatyadi Taila*, *Triphala Ghrita*.

Therapeutic Uses: *Kandu*, *Medoroga*, *Mukharoga*, *Vrana*, *Amatisara*, *Urustambha*, *Kapharoga*, *Karnaroga*, *Netraroga*, *Meha*.

BIBHITAKA

Botanical name: *Terntinaliabelerica*

Family: *Combretaceae*

Description: *Bibhitaka* consists of a pericarp of dried ripe fruits of *Terntinaliabelerica*, a large deciduous tree, 10-12 m or more high, commonly found in plains and forests up to 900 m

Constituents- Gallic acid, tannic acid and glycosides.

Properties and Action: *Rasa* is *Kasaya*, *guna* are *Laghu*, *Ruksa*, *Viryas* are *Usna*, *Vipaka* is *Madhura*, and *Karma* are *Chakshusya*, *Kesyas*, *Kaphapittajit*, *Bhedaka*, *Krminasana*, *Kasahara*.

Important Formulations: *Triphala Churna*, *Triphaladi Taila*, *Lavangadi Vati*.

Therapeutic Uses: *Chardi*, *Kasa*, *Krmiroga*, *Vibandha*, *Svarabheda*, *Netraroga*.

AMALAKI

Botanical Name: *Emblica Officinalis*

Family: *Euphorbiaceae*

Description: Consists of the pericarp of dried mature fruits of *Gaertn*. Mostly collected in winter season after-ripening and in Kashmir in summer, a small or medium-sized tree, found both in natural state in mixed deciduous forests of the country ascending to 1300 m on hills; cultivated in gardens, home yards or grown as a roadside tree.

Properties and Action: *Rasa* are *Madhura*, *Amla*, *Katu*, *Tikta*, *Kashya* *Guna* is *Laghu*, *Ruksha* *Virya* is *Shita* (cold), *Vipaka* is *Madhura* and *Karma* are *Chakshusaya*, *Rasayana*, *Tridosajit*, *Vrsya*

Important Formulations: *Cyavanaprasa*, *Dhatri-Lauha*, *DhatryadiGhrta*, *TriphalaChurna*.

Therapeutic Uses: *Raktapitta*, *Amlapitta*, *Premeha*, *Daha*.

DANTI

Botanical Name: *Baliospermum montanum*

Family: *Euphorbiaceae*

Description: It consists of dried root, a leafy under-shrub, distributed in the outer range of the Himalayas from Kashmir to Assam and in moist deciduous forests elsewhere in India. Constituents- *B-Sitosterol* and *Triterpenoids*, *Resinous Glycosides*, *Phorbol Esters*.

Properties and Action: *Rasa* is *Katu*, *Guna* are *Tik-sna*, *Sara*, *Laghu*, *Virya* is *Usna*, *Vipaka* is *Katu*, *Karma* are *Kaphahara*, *Raktadosahara*, *Vidahara*, *Dipana*, *Rocaka*, *Sodhaka*, *Vikasi*.

Important Formulations: *Dantyarista*, *PunarnavaMandura*, *Abhyarista*, *Kankayana Gutika*, *Danti-haritaki*, *KalyanakaKsara*, *KaisoreGuggule*.

Therapeutic Uses: *Tvakadosa*, *Daha*, *Sotha*, *Udarroga*, *Sularoga*, *Krimi*, *Arsa*, *Asmari*, *Kandu*, *Kustha*, *Vrana*, *Pliha Vriddhi*, *Gulma*, *Kamala*.

MUSTA

Botanical Name: *Cyperus rotundus*

Description: It consists of dried rhizome of *Cyperus rotundus*, occurring throughout the country, common in waste grounds, gardens and roadsides, up to an elevation of 1800 m.

Properties and Action: *Rasa* are *Tikta*, *Katu*, *Kasaya*, *Guna* are *Laghu*, *Ruksha*, *Virya* is *Shita*, *Vipaka* is *Katu* *Karma* are *Pittakaphahara*, *Sthoulyahara*, *Sothahara*, *Dipana*, *Pacana*, *Grahi*, *Trsnanigrahana*, *Krmighna*, *Tvakadosahara*, *Jwaraghna*, *Visaghna*.

Important Formulations: *Musakarista*, *Mustakadikwatha*, *Asokarista*, *Mustakadi Curna*, *MustakadiLehya*.

Therapeutic Uses *Agnimandhya*, *Ajerna*, *Trsna*, *Sangrahani*, *Swasa*, *Kasa*, *Mutrakrechra*,

Vamana, *Stanyavikara*, *Sutikaroga*, *Atisara*, *Amavata*, *Krimi-roga*.

MARICA

Botanical Name: *Piper nigrum*

Family: *Piperaceae*

Description: *Maricha* consist of fully mature dried fruit of *piper nigrum*, a climber, cultivated from Konkan Southwards, especially in North Konkan Kerala, and in Assam; Depending upon climatic conditions fruits ripen from December to March, fruits harvested from December to April.

Properties and Action: *Rasa* are *Tikta*, *Katu*, *Guna* are *Laghu*, *Ruksha*, *Tiksna*, *Virya* is *Usna*, *Vipaka* is *Katu* and *Karma* are *Slesmahara*, *Pittakara*, *Kaphavatajit* *Vatahara*, *Chedana*, *Dipana*, *Ruchya*, *Jantunasana*, *Medohara*, *Chedi*, *Hrdroga*, *Vataroga*

Therapeutic Uses: *Swasa*, *Kasa*, *Krimi-roga*.

PIPPALI

Botanical Name: *Piper longum*

Family : *Piperaceae*

Description: *Pippali* consists of dried, immature, catkin-like fruits with bracts of *Piper longum* Linn. (Fam. *Piperaceae*), a slender, aromatic climber with perennial woody roots, occurring in hotter parts of India from the central Himalayas to Assam up to lower hills of West Bengal and evergreen forests of Western ghats as wild, and cultivated in Northeast and many parts of the South.

Properties and Action: *Rasa* are *Madhura*, *Katu*, *Tikta*, *Guna* are *Laghu* (Light), *Snigdha*, *Virya* is *Anusna*, *Vipaka* is *Madhura* and *Karma* are *Dipana*, *Hrdya*, *Kaphahara*, *Rucya*, *Tridosahara*, *Vatahara*, *Vrsya*, *Rasayana*, *Rechana*.

Important Formulations: *Amrtarista*, *Ayasakrti*, *Cyavanaprasa Avaleha*, *Gudapippali*, *Asvagan-dhadyarista*, *Kumaryasava*, *Candanasava*, *Siva Gutika*, *Kaisora Guggulu*.

Therapeutic Uses *Swasa* (Dyspnea), *Kasa* (cough), *Gulma*, *Hikka*, *Krmi*, *Ksaya*, *Kustha*, *Pliha Roga*, *Prameha*, *Sula* (Pain), *Trsna*, *Udara Roga*, *Ama Vata* (*Rheumatoid Arthritis*.), *Amadosa*, *Jwara* (Fever).

KATUKA

Botanical Name: *Picrorhizakurroa*

Family: *Scrophulariaceae*

Constituents- Glucoside (Picrorhizin).

Properties and Action: *Rasa* is *Katu*, *Tikta*, *Gunais Laghu*, *Viryais Usna* *Vipaka* is *Katu* *Karma* are *Hrdya*, *Pittahara*, *Depaniya*, *Bhediniya*, *Jvarahara*.

Therapeutic Use: *Swasa*, *Daha*, *Jwara*, *Kamala*, *Kustha*, *Visamajwara*, *Arochaka*.

DEVADARU (Heart Wood)

Botanical Name: *Cedrus deodara*

Family: Pinaceae

Description: **Devadaru** consists of dried heartwood of *Cedrus deodara*, a very large and tall ever green tree, up to 75m in height and ranging from 2.4 to 3.6 m in girth, occasionally even up to 13.5 m in girth, found in Northwestern Himalayas from Kashmir to Garhwal, between 1200 to 3000 m.

Properties and Action: *Rasa* is *Tikta*, *Guna* are *Laghu*, *Snigdha*, *Virya* is *Usna* (hot), *Vipaka* is *Katu*, *Karma* are *Kaphahara*, *Vatahara*, *Dustavranasodhaka*.

Important Formulation: *Khadirarista*, *Dasamulrisha*, *Devadarvarista*, *Mrtasanjivanisura*, *Karpuradyarka*, *PramehamihiraTaila*, *CandanadiChurna*, *SudaršanaChurna*, *Narayana Taila*, *PradarantakaLauha*, *VataraktanakaLauha*, *MahavisagarbhaTaila*.

Therapeutic Uses: *Sotha*, *Jvara*, *Krmi*, *Kandu*, *Pinasa*, *Vibandha*, *Adhamana*, *Tandra*, *Hikka*, *Prameha*, *Kasa*, *Kustha*, *Amavata*, *Raktavikara*, *Sutikaroga*.

PUSHKARA

Botanical Name: *Inula racemosa*

Family: Asteraceae

Description: **Puskara** consists of dried root of *Inula racemosa*, a stout herb, 0.5 to 1.5m high, mostly found in Western Himalayas up to 2600 m.

Properties and Action. *Rasa* is *Katu*, *Tikta*, *Gunais Laghu*, *Viryais Usna*, *Vipaka* is *Katu* *Karma* is *Kaphavatajt*.

Important Formulations: *KankayanaGutika*, *Kumaryasava*, *Mahanarayana Taila*, *Manasamitravaaka*, *Dasamularista*, *Lodhrsaava*, *RasnadiKvathaChurna*.

Therapeutic Uses: *Aruchi*, *Adhmana*, *Hikka*, *Jvara*, *Kasa*, *Swasa*, *Parsvashula*, *sopha* (swelling)

HARIDRA

Botanical Name: *Curcuma longa*

Family : Zingiberaceae

Description: **Haridra** consists of the dried and cured rhizomes of *Curcuma longa*, a perennial herb extensively cultivated in all parts of the country, the crop is harvested after 9-10 months when lower leaves turn yellow rhizomes carefully dug up with hand-picks between October-April.

Constituents- Essential oil and a colouring matter (curcumin)

Properties and Action

Rasa are *Katu*, *Tikta*, *Guna* is *Ruksha*, *Virya* is *Usna* *Vipakais Katu*, *Karma* are *Krmighna*, *Kusthaghna*, *Varnya*, *Vishaghna*, *Kaphapittanut*, *Pramehanasaka*

Therapeutic Uses: *Pandu*, *Prameha*, *Vrana*, *Visaavikara*, *Kustha*, *Tvagroga*, *Sitapitta*, *Pinasa*

HARITAKI

Botanical Name: *Terminalia chebula*

Family : Combretaceae

Description: It consists of the pericarp of mature fruits of *Terminalia chebula*, moderate-sized or the large tree found throughout India, chiefly in deciduous forests and areas of light rainfall, but occasionally also in slightly moist forests, up to about 1500 m elevations, throughout India, flowers appear from April, August and fruits ripen from October-January.

Properties and Action: *Rasa* are *Madhura*, *Amla*, *Katu*, *Tikta*, *Kasaya*, *Guna* (Quality) are *Laghu*, *Ruksha*, *Viryais Usna*, *Vipaka* is *Madhur* and *Karma* are *Chakshusya*, *Dipana*, *Hrdya*, *Medhya*, *Sarvadosaprasamana*, *Rasayana*, *Anulomana*.

Important Formulations: *Triphala Churna*, *TriphaladiTaila*, *Abhayarista*, *Agastya Haritaki*, *Rasayana*, *CitrakaHaritaki*, *DantiHaritaki*, *DasamulaHaritaki*, *Brahma Rasayana*, *AbhayaLavana*, *PathyadiLepa*.

Therapeutic Uses: *Sotha*, *Arsa*, *Aruci*, *Hrdroga*, *Kasa*, *Pandu*, *Prameha*, *Udavarta*, *Vibandha*, *Jirnajvara*, *Visamajvara*, *Siroroga*, *Tamakaswasa*, *Gulma*, *Udararoga*.

PIPPALI MULA

Botanical Name: *Piper longum*

Family: Piperaceae

Description: Consists of dried, cut, stem pieces of *Piper longum* a slender, aromatic, creeping and per-

ennial herb; native of the hotter parts of the country and found wild as well as cultivated extensively in Bengal and southern states.

Properties and Action: *Rasa* is *Katu*, *Guna* are *Laghu*, *Ruksha*, *Viryais usna*, *Vipaka* is *Katu* and *Karma* are *Dipana*, *Kaphahara*, *Pchana*, *Rucya*, *Vatahara*, *Vatanulomana*, *Sulaprasamana*.

Therapeutic Uses: *Anaha*, *Gulma*, *Kramiroga*, *Udararoga*, *Vataroga*

MANDURA

Chemically *Mandura* is an Iron oxide that is formed by the action of an open atmosphere on the waste part of iron. This is a very slow reaction and takes years to convert Iron into Iron oxide. Hence it has been said that naturally formed *Mandura* should be very old. Probably within that time limit conversion of Iron particles into Iron oxide may get completed.

Synonyms: *Lohaniryasa*, *Ayashishta*, *Malodbhava*, *Ayoraja*, *Shastrachurna*, *Ayomala*, *Lohakitta*, *Lohamala*, *Lohasinhnika* and *Shinhan*.

Significance: All these synonyms indicate that *Mandura* is originated from *Lauha Dhatu*.

Origin and Occurrence: In *Rasa* classics, it has been mentioned that after severe heating of *Lauha* on fire, when hammering is done some parts are separated. These separated parts after many years turn into *Mandura*. *Mandura* is the by-product of the metallurgical process during the extraction of Iron (Fe) and Copper (Cu) from their respective ores. It occurs as lumps or aggregates at the areas where smelting activity is carried out for the extraction of Iron. Iron is the main constituent of *mandura* followed by silica with minor amounts of Cu, S, Pb, Zn, Ag, Cd, Au.

According to origin:

In most of the *Rasa* classics *Mandura* is divided into 3 types based on the type of *Lauha*, from which it is originated *Mundakitta* is reddish, heavy and unctuous (*Snigdha*), *Tikshnakitta* It is shining like *Anjana* (collyrium), heavy and solid (non-porous) and *Kantakitta*: It is the heaviest, small, solid, rough and yellowish. It gives silvery shining on cut. *Mandura* which is 100 or more years old is said to be best. *Mandura* which is 70 to 80 years old is taken as of medium

quality and less than 60 years old *Mandura* is considered as *Visha* (poisonous).

Acceptable variety: *Mandura* which is nonporous, heavy, unctuous, hard and more than 100 years old is considered suitable for therapeutic uses.

Adverse effects management: *Virechana* should be done with *Aragvadha-phala-majja*.

Marana of Mandura: The process of making the minerals and metals into fine powder form (*bhasma*) by applying the required quantum of heat is known as *Marana*. It is most important therapeutically because Metals and minerals are therapeutically used only in the form of *Bhasma*. By this process Metals and minerals become in a readily absorbable form, Free from Toxicity and conversion of initial material into suitable compound occurs that can be used internally without producing any harmful effect. By subjecting it to *Marana* process, the unconverted Iron if present will be converted into Iron oxide compound form and then it is not likely to produce any toxic effect. In *Samhitas* and *Nighantus* and in early texts of *Rasa Shastra Marana* of *Mandura* is not found. It is used only after proper processing to make it easily assimilable. *Rasa Kamdhenu*, *Rasa Tarangini* is the classic in which *Marana* of *Mandura* is mentioned.

Therapeutic indications of Mandura Bhasma: *ManduraBhasma* is indicated in *Shopha*, *Kamala*, *Pandu*, *Krimi*, *Arsha*, *Grahani*, *Pliharoga*, *Shosha*, and *Amavata* with specific *Anupana* or *Sahapana*. It is said to be more suitable for children (*Balanamatishasyate*). *Mandurabhasma* is indicated as general *Anupana* for *Panduroga* in *Yogaratanakar*.

Dose: Terminologies used in *Rasa Shastra* texts to indicate the dose of *Mandurabhasma* is as follows- *Gunja padansha - gunja dwitayai*. e. 30 mg-250 mg.

Anupana: For the management of various diseases, *Mandura Bhasma* is administered with suitable *Anupana* for specified diseases.

Modern chemistry: *Mandura* is considered as Iron rust. It is formed by the action of the open atmosphere on the waste part of iron. When ordinary iron is exposed to moist air, it becomes, coated with a reddish-brown deposit of hydrated ferric oxide called rust. Its chemical formula is $Fe_2O_3 \cdot H_2O$.

Physical properties: *Mandur* is a rough lumpy mass, exhibits voids, black in colour and streak is also black, no cleavage, the fracture is Conchoidal, dull lustre, tenacity is Brittle but hard, transparency is opaque, hardness is 6 to 6.5 and Sp. Gr is 3 to 3.8.

Chemical properties:

Assay: *Mandura* should contain not less than 30% Iron (Fe) and 30% Silica when analyzed by gravimetric method. *Mandura* should contain not less than 80% Fayalite (Fe_2SiO_4) when studied through the XRD method. *Mandura* should not contain more than the stated limits for Arsenic (6 ppm) and Cadmium (8 ppm). It contains Copper 0.45 %, Zinc 50 ppm, Silver 7 ppm.

Review of Accessory Material

Gomutra: Punarnava Mandura is a Mandura preparation called Mandurakalpa prepared by Rasakriya method. another method of preparation of Mandurakalpa is *KhalviyaLauha* Kalpa method. Gomutra is used for both purposes.

Chemical constituents of Gomutra: Urea $\text{CO}(\text{NH}_2)_2$, Uric Acid ($\text{C}_5\text{H}_4\text{N}_4\text{O}_3$), Nitrogen (N_2), Sulphur (S), Copper (Cu), Iron (Fe), Sodium (Na), Potassium (K), Phosphate (P), Ammonia (NH_3, NH_4), Manganese (Mn), Calcium (Ca), Formic acid (HCOOH), Aurum Hydroxide (AuOH).

DISCUSSION

The present study was planned to assess the efficacy of *Punarnava Mandura in Pandu roga*. *Mandura Bhasma* which is one of the good Haemetinic proved by various research works (experimental and clinical) is the main ingredient of this formulation. *Punarnava Mandura* is a very well-known drug by its “*Raktajanya*” property mentioned by Acharya Charaka. Furthermore, no clinical work has been reported on *Punarnava Mandura* in this department, besides strong classical references. Based on this, the reference regarding this in “*Bhaishajya Ratnavali*” was assessed for the preparation of this formulation used for the management of *Pandu* clinically. Pharmaceutics) emphasis has been given to work on some *Bhasma* based preparations because *Bhasmas* are the basic and unique preparation of *Rasa Shastra* having

good therapeutic efficacy and longer self-life in comparison to the herbal dosage form. Preparations having *Bhasma* as an ingredient is better absorbed in the body tissues and have better therapeutic efficacy. These are called herbomineral preparation. The main aim of the present study is that most of the population of India, and the world, in different age groups, including both sexes are suffering from *Pandu Roga* (Iron deficiency anaemia). There are large numbers of Iron preparations available in Modern medicine having the ferrous form of iron, but most of these cause side effects like nausea, vomiting, constipation etc. To overcome these problems patients, need to take such type of Ayurvedic preparation which should be highly effective in curing the above disease, quick in action, longer self-life, better palatability as well as cost-effective.

CONCLUSION

Acharya Charaka has described various formulations for the treatment of *Pandu Roga*; most of these are “*Lauha*” preparations. *Mandura* is known as *Lauha Kitta* and *Bhaishajya Ratnavali* states that if *lauha* is not available, *Mandura* can be taken as an alternative. *Punarnava Mandura* is one of the Herbomineral preparations having *Mandura* as an ingredient, indicated for *pandu roga*. In the present work, *Punarnava Mandura* was prepared by the standard method. To analyse its nature, structure, and particle size, elements present in the compound and chemical constituents present in herbal drugs, analytical evaluation was planned, and a clinical study was done to see the therapeutic effect on *Pandu roga* patients. So, there are descriptions of multiple drugs which are very effective in iron deficiency anaemia.

REFERENCES

1. Datta GK. et al. Antiulcerogenic activity of Shatavari Mandura- an Ayurvedic herbomineral preparation, *Indian J Exp Biol.* 2002; 10:1173-7.
2. Gupta Kaviraj Atridev. *Vrudda Vagbhata - AstangaSangra.* Krishana das Academy, Varanasi, 1993; 2:22.

3. Prof, P.V. Sharma -Dravya Guna Vighyanam vol-2, published by Choukambha Barathi Academy, Varanasi, 16th edition 1995; 2:237.
4. Comparative study of Nishalohavati and Navayaslohavati in the management of panduroga. KC-GAAC, Ahmedabad-GAU, Jamnagar, 2008.
5. Patel Bhavesh H, Comparative Pharmaceutico-Pharmacoclinical Study of Kasis Bhasma (Prepared by three Different Methods) w.s.r. to its effect On Pandu Roga (Iron Deficiency Anaemia) IPGT&RA, GAU, Jamnagar.2006.
6. O.P. Ghai, Piyush Gupta, V.K. Paul, Essential Pediatrics by, published by CBS publishers, 6th edition 2005.
7. Akman M, et.al. The effects of iron deficiency on infants' developmental test performance. *Acta Paediatr*, 2004; 10:1391-6.
8. Fauci A. S. et.al. Harrison s Principles of Internal Medicine, The McGraw Hill Companies, New York, 1998; 1: 640, 641.
9. Nadakarni KM. Indian Materia Medica, 3 rd Edition, Popular Prakashan, Bombay 1893; 2:634.
10. Jyothy KB. A clinical study on the efficacy of Dhatriyarista in Pandu w.s.r. to IronDdeficiency Anaemia.Rajeev Gandhi University of health sciences, Karnataka Bangalore.2009.
11. Sarkar P.K. A Comparative Pharmaceutico-Pharmacoclinical Study of LauhaBhasma and ManduraBhasma W.S.R. To Its Pandu- Hara Effect-RS & BK-IPGT&R, Jamnagar, Gujarat, Joshi Damodara. Lohavijnaniyam. Ist Edition, Chaukhamba Sanskrit Bhawan chowk Varanasi 1998; 9.4: 48-50.
12. Harrison's. Principles of Internal medicine, 18th Edition. McGrew-HillEurope2011; 1: 846.
13. Shastri-Kashinath. Rasatarangini, Motilala Banarasi Das, Varanasi, 11th Edition, 1979; 39.
14. Trikamaji Yadava ji. Acharya-Rasamritam, MotilalaBanarasi Das, Varanasi, 1979; 104: 24.
15. Shastri Kashinath and Cathurvedi Gorakhanath. Charaka SamhitaVidyotini Hindi commentary, 16th Edition, Chaukhamba Bharati Academy, 1989; 11.
16. MC Graw Hill. Harrison's principles of internal medicine, 13th edition, Health profession division 1992; 2.
17. Recommendations to Prevent and Control Iron Deficiency in the United States. *MMWR* 1998; 47; 5.
18. Vagbhata - Astanga Hridaya with Sarvanga Sundara commentary of Arunadutta and Ayurveda
19. Rasayana of Hemadri. Choukambha Surabharathi Prakashana, Varanasi, Reprint 2002; 21.
20. Das srinageen, Shahchhaganlal, rasavaidhya, B. Jain. Bharat Bhaishajya Ratnakar rasa. New, Delhi. 197 9; 3:417-418.
21. Bhaishjya Ratnavali, Pandu rogachikitsa Prakarana, Ist Edition, 2015;1: 65-67.
22. Mishra Gulraj Sharma. Rasa Kamdhenu Shuladhikara. choukhbha orientalia, Varanasi. 2014; 1:178-179.
23. Kumar Praveen, thesis, "Vachadi Upanaha and Vachadi Ghana vati in SandhigataVata w.s.r. to Osteoarthritis" Department of Pancha Karma, IPGT&R, Jamnagar, Gujarat, 2005.
24. Sharma PV. Sushruta Samhita, Ist Edition Chaukhamba Bharati Academy Varanasi 2005.
25. Anonymous, Ayurvedic Formulary of India, Mandura Kalpa, Department of AYUSH, 2nd Edition, Part 1, Ministry of Health and Family Welfare, Government of India, 2003.
26. Anonymous, Drugs and Cosmetics (Sixth Amendment) Rules, 2012 Ministry of Health and Family Welfare (Department of AYUSH).
27. Mohan Harsh. pathology, 6th Edition jaypee brothers' medical publishers, Ansari Road Daryaganj, New delhi.2010.
28. Amarkosha Purvakhand, 5-13.
29. Pharmacopia of India 3: 213-214.
30. Ayurvedic Pharmacopia of India api, 3: 129-130.
31. Ayurvedic Pharmacopia of India api 3:115-117.

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: *Chhaya Gupta & Sushma Tiwari A Scientific Drug Review Onpunarnava Mandur*. International Ayurvedic Medical Journal {online} 2021 {cited November 2021 } Available from: http://www.iamj.in/posts/images/upload/2789_2796.pdf