**DETOXIFICATION OF DHATU DRAVYAS WITH NATURAL DRUGS-A CLASSICAL DRUG REVIEW**

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**Abstract**

Numerous formulations that are either poly-herbal, poly-mineral, or herbo-mineral can be seen in various classical text used for different diseases. Their prolonged shelf life, rapid action, quick absorption, low dosage, and comprehensive therapeutical aspects make them extremely distinct for producing instantaneous advantages among all other formulations. These compositions contents, which are primarily heavy metals need to be completely "detoxified" using orderly pharmaceutical procedures before being adding to any formulations. If these pharmaceutical methods are not performed systematically, a number of negative outcomes may occur. In order to prevent side effects of heavy metals, many natural organic medications are specifically prescribed by ancient sages. Several natural medicines are discussed, along with their Ayurveda qualities and phytochemical characteristics, to lessen the overall negative effects of improperly processed *Dhatu* (metal). For that reason, the list of natural biological medications for selected *Dhatus* are emphasized in this article.

Key Word: Detoxified, Dhatu, Pharmaceutical procedures

**INTRODUCTION**

The word "Ayurveda," which translates to "Science of Life," refers to the vast range of substances that are used in Ayurvedic formulations, including mineral, metals and plants. Owing to the inclusion of a broad range of ingredients, these medications can be classified as poly-herbal, poly-mineral, or herbo-mineral and are used to treat a variety of ailments. The development of formulations, especially those with a metal or mineral origin, is a major topic in the Ayurvedic curriculum covered by Rasa Shastra, also referred as “Ayurvedic Pharmaceutics” based on current NCISM, its history dates back to the pre-Vedic era, when metals were utilized to treat a wide range of illnesses with success. There is a long history and an abundance of literature discussing the medicinal applications of metals such as gold, copper, and mercury for both curative and preventive purposes. Experts in Ayurveda state that most of the drugs in the Ayurvedic formulary include herbs along with one or more metals, mineral processed with respective herbal juices i.e. adopting Bhavna process results in incredible therapeutic outcomes. Because of their lower dose form, rapid action, quick absorption, comprehensive treatment benefits, and extended shelf life, these formulations are extensively employed therapeutically as well as for preventive aspects. The elemental forms of heavy metals are toxic, so before incorporating them into herbal formulations to treat illnesses, one should be well-versed in the pharmaceutical procedures involved in detoxifying all of these heavy metals and minerals so that additional applications can be made safely. Furthermore, if these pharmaceutical processes are not carried out systematically on these metals or minerals and any negative consequences are formed, techniques to minimise employing natural organic drugs are clearly outlined in these classical treatises by our ancient sages. Despite the fact that various papers have been published in the past on the use of these heavy metals as ingredients in erroneous pharmaceutical procedures with their management, that are limited to one or two metals. However, ill effects for specific distinct *Dhatus,* along with their natural medications & its phytochemical ingredients, is procured and emphasised from many classical texts. This topic will definitely convey brief ideas to medical practitioners or other pharmaceutical individuals involved in manufacturing these formulations so that patients can adopt this treatment cautiously by following proper diet regimen and can get comfort from their remedy with little or no complications. [1]

**AIM & OBJECTIVE**

To enumerate herbal remedies for specific *Dhatu Dravyas* and discuss the modern and Ayurvedic properties of these herbal remedies.

**MATERIALS AND METHOD**

According to *Rasa Shastra, Dhatu* has negative effects and several natural medications with documentation in many classical books are obtained and provided below.

1. **TAMRA BHASMA**-**Ill Effects**:

 *Utklesa*(Nausea),*Vaman*(Vomit),*Brahma*(giddiness), *Unmada* (insanity) , *Daha* (burning sensation),*Moha* (delusion) , *Murcha*(unconsciousness),*Kustha* (skin diseases),*Sula* (pain),*Ayu, Kanti, Virya, Bal Nasak* (detoriation in life span, complexion, potency, strength)(.

**Anti-Dotes**: *Dhanya Swarasa* or *Kwatha* and *Misri* for 3 days*, Munivrihi* with *Misri*

1. **LOHA BHASMA**-**Ill Effects**:

*Hrdroga* (heart diseases), *Kustha* (skin diseases), *Udarasula* (abdominal pain), *Daha* (burning sensation), *Guruta* (heaviness in the body), Sandhabhava (Impotency), Constipation, *Asmari* (urinary calculi) (R.T 20/10) *Vatvyadhi* (Vata predominant diseases),*Apasmar* (epilepsy), *Gulma* (abdominal tumour), *Sotha* (inflammation), *Udar Roga* (abdominal diseases), *Kustha* (skin diseases), *Madhumeha* (diabetes), *Raj Yakshma* (tuberculosis).

**Anti-Dotes***: Vidanga Bhavita* with *Agastya Swarasa* and taken with *Agastya Swarasa* **VANGA BHASMA**- **Ill Effects**:

*Switra Kustha* (vitilgo), *Gulma* (abdominal tumor), *Prameha* (diabetes), *Hrud Roga* (cardiac diseases), *Sula* (pain), *Arsa* (haemorrhoid), *Kasa*(cough), *Swasa* (dyspnoea), *Vaman*(vomit), *Kshaya*(emaciation), *Pandu* (anaemia), *Sotha* (inflammation), *Slesma Jwara* (fever), *Bhagandar* (fistula in ano), *Sukra Asmari, Rakta Vikar* (blood disorder)**.**

**Anti-Dotes**: *Meshrasringi Curna* with *Misri* for 3 days

1. **NAG BHASMA**-**Ill Effects***:*

*Prameha* (diabetes), *Kamla* (jaundice), *Kshaya* (emaciation) *Switra* (vitilgo), *Twak Roga* (skin diseases), *Sandhi Vedana* (joint pain), *Pakshyaghat* (paralysis), Gulma (abdominal tumour), *Anaha* (flatulence), *Sotha* (inflammation), *Bhagandar* (fistula in ano), *Agni* *Mandya* (dyspepsia), *Ansasotha* (inflammation in shoulder), *Udara Sula* (pain abdomen).

**Anti-Dotes**: *Swarna Bhasma* and *Haritaki Curna* with *Sarkara* for 3 days

1. **YASADA BHASMA**-**Ill Effects**:

 *Gulma* (abdominal tumour), *Prameha* (diabetes), *Kshaya* (emaciation), *Kustha* (skin diseases), *Ajirna* (indigestion), *Vat Vyadhi* (disorder due to Vata Dosha), Vaman (vomit)

**Anti-Dotes**: *Bala* and *Abhaya Curna* with *Misri* for 3 days

**DISCUSSION:**

*Ayurveda*, a natural therapeutic method, gives relief for numerous cures. It is a stock pot of several formulations, predominantly filled with many *Rasaousadhies*, and are integrated with drug of various origins like plant, animal, or mineral origin. These are claimed to be safe if the ingredients of these formulations, particularly those including metals and minerals, undergo all pharmaceutical methods precisely as stated in several traditional writings by many *Rasa Acharyas*. However, if one does not follow these techniques while undergoing pharmaceutical processes and uses improperly processed raw materials that may be either metal or mineral in devising formulations, and are prescribed by a physician, many adverse effects may occur within the body unknowingly. Several *Acharyas* have explained how to combat unfavourable consequences by applying natural treatments of plant, animal, or mineral origin owing to *Ayurvedic* features as well as the phytochemical components included in it without causing any harmful effects. In this section, the qualities of several natural organic medications for individual *Dhatu Vargas* are discussed, along with a brief overview of *Ayurvedic* properties and current perspectives.

***TAMRA*-*DHANIYAK***2

S.N-Coriandrum sativum, Family-Umbelliferae -Anti-bacterial activity in aquoeus extract of coriander, anti-helminthic effects in crude aqueous and hydroalcoholic extracts of fruit. Corriander essential oil with anti-microbial, anti-bacterial & anti-fungal properties, proves beneficial for *Kustha* (skin diseases).Antioxidant activites due to polyphenolic compounds ,aqueos extract (i.e caffeic acid, protocatechuic acid, glycitin), hot water extract of C.fruit, aerial parts of the hydroalcoholic extract of *C.sativum*, carotenoids in coriander .Long chain fatty acid in coriander fruit oil and umbelliferin extract of C.fruit has petroselinic acid triglycerides proves anti-aging . So, these may be used for enhancement of *Aayu* (life span*), Kanti* (complexion*), Virya* (potency*), Bala* (strength). It provides strength to *Mastiska* (good for nerves). So may have advantageous for *Brahma* (giddiness)*, Unmada (*insanity)*, Moha* (delusion)*, Murcha* (unconsciousness). It has *Jwaraghna* (anti-pyretics)*, Sitaprasamana* (neutralize of cold & chill) property so can be used to neutralize *Utklesa* (nausea), *Vaman* (vomit)*, Daha* (burning sensation) etc.

2) ***LOUHA*** -***VIDANGA* 3**

 S. N- Embelia ribes, Family-Myrsinaceae- It is beneficial in *Ksaya roga* (*Rajyaksma* i.eTuberculosis) due to Rasayan property and its antioxidant activity which has been proven by Embelin, flavonoids and phenolic compounds present in ethanol extract of *E.ribes*. Thus use in enhancement of *Bal* (physical strength) & *Kanti* (skin complexion) .It has also played beneficial role in *Kustha* (skin diseases) due to anti-helmintic property(ethanolic extract of fruit of *Embelia ribes*), antibacterial property(ethanol and aqueous extract of *E.ribes*), anti-fungal property(petroleum ether, solvent ether, methanolic and aqeous extract ), anti-histamin property (Embelin).**,** anti-allergic activity (ethanol extract of fruits), Hepatoprotective activity (extract of *E.ribes*).Its *Pramehagna* action (Antidiabetic activity) may be due to ethanol extract of *E.Ribes* fruit.It has effect in *Vatavyadhies* (vata predominant disorders) due to *Usna virya* (hot potency), *Sulaghna* (analgesic activity) of Embelin, Embelin-desalts, Potassium embelate. It may play as *Sothagna* (Anti-inflammatory) due to embelin in fruit. Its *Hrudaya* (Cardio protective property) is due to its aqueous extract which leads to decrease in systememic blood pressure, heart rate. So, it may show some activity in *Hruday Pida* (Cardiac pain). Due to its *Deepana* –*Pachan* property used in *Agnimandya, so* may be used in *Udara Roga* (Abdominal diseases)

***AGASTYA*** 4

*S. N-Sesbania grandiflora, Family-Leguminosae****-***Acetone extract of leaves of *S.grandiflora* has Anti-oxidant property and methanolic flowerextract shows immunomodulatory property. Compounds like isovestitol, medicarpin, sativan & betulinic acid are present. These features may show useful action in *Rajyakshma* (Anti-TB property), thus has able to protect lungs from the oxidative harm due to Anti-oxidant potential. Major metabolites like vomifoliol, loliolide (terpenoid) & quercetin (flavonoid) may provide it safe for *Madhumeha* (Diabetes). Antimicrobial activity due to flavonoids, saponins and tannins. Green synthesised silver nanoparticles (AgNPs) using aqueous leaf extract shows anti-microbial, anti-bacterial and antifungal activity. Hepatoprotective property due to ethanolic, aqueous flower extract and leaf extract. Thus, may be used in *Kustha* (skin diseases). Methanolic concentrate has shown Analgesic property**,** so may be used in *Vata Vyadhi* (Diseases due to aggravation of *Vata Dosha*). Leaf juice has shown anti-urolithitic activity against calcium oxalate type stones. So may be use in *Asmari* (Renal calculi). Ethanol concentrate of leaves & flowers is effective in retardation of tumor growth. This property may play beneficial role in *Gulma* (abdominal tumour)

3) ***VANGA*-*MESASHRINGI***5

S.N*-Gymnema sylvestre ,*Family-Asclepiadaceae - *Pramehgna* (Antidiabetic action) due to saponins (gymnemic acids, gymnemasa saponins, gurmarin), extract(gymnemagenin), antioxidant activity of ethanolic leaf extract, methanolic extract of leaves (i.e crude saponin fraction and 5 triterpene glycosides i.e Gymnemic acids I –IV and gymnemasaponins).*Kusthaghna* property and its antibiotic ,Anti-microbial properties due to methanolic and ethanolic leaf extract .Hydroalcoholic extract serves Hepatoprotector .So may be used in *Kustha* (skin diseases), to enhance *Sareera Sobha* ( body complexion) . *Sotha* (inflammation) due to improper use of *Vanga* may be treated with aqueous extract of leaves and bioactive constituents like tannins, saponins having anti-inflammatory action. Anti-arthritic activity due to extract, water soluble & petroleum ether extract, triterpenoids, steroids, saponin, glycosides in leaves. So, it helps to treat *Sula* (pain). Gymnemic acid present in G.sylvestre effective against obesity while hydroalcoholic extract of leaves reduces lipids levels with increase in HDL and hexane of leaves also possess anti-obesity activity along with improved cholesterol, TG, LDL and HDL level. So, these activities show its effectivity in *Hrud Roga* (Cardiac diseases).

4) ***NAGA****-* ***HARITAKI*** [6] Family-Combretaceae, S. N-Terminalia chebula-Has *Tridoshahara* effect specially *Vatashamaka* , so used for *Vata Vikara* (*Vata* disorder predominance) and has proven its effectiveness in *Sandhi Vedana* (joint pain), *Ansasotha* (shoulder pain).Due to its *Balya* action for *Nadivahasamsthan* (Nervous system) used for *Nadi Dourbalya* (nerve weakness), it is consider *Prastha* (superior) for *Vata* disorder so, effectively use in *Paksyaghat* (paralysis). *Deepan & Pachan* (Appetizer & digestive), *Anuloman* (Carminative), *Mridurechana* (purgative) *, Krimighna* (anti-helminthic) property has made it use in *Agnimandya* (dyspepsia), *Sula* (pain)*, Anaha* (flatulence)*, Gulma* (abdominaltumour), *Udara roga* (abdominal diseases)*,* . Property like *Yakrit Utejak* (stimulating liver function) has shown Hepatoprotective activity due to its radical scavenging action of ethanolic extract of fruit which contains Chebulic Acid (CA) and neochebulic acid in proportion of 2:1 and thus prevents liver damage. Thus, these characterstics has proven it to be used for *Kamla* (jaundice). It also has *Pramehagna* property. Reno protective and antidiabetic effect is due to methanolic extract

of T. chebula, T. belerica, Emblica officinalis which individually exist in it and their fusion form in form of ‘Triphala’ which reduces the blood sugar level. So, these features have beneficial effect in *Prameha* (Diabetes) caused due to ill effects of *Naga*. Its *Kanti Vardhaka* (complexionenhancer), *Kusthaghna* (curing skin diseases)property, *Rasayan* (Antioxidant) property has made it to be used for *Swetra* (vitiligo)*.*

***SWARN****A* 7

USE- in *Bhasma* form-Has properties like *Balya* (increases strength), *Pustikarak* (providesstrength) *,Rasayan* (rejuvenation) , so maybe use in *Kshaya* (i.e emaciation) .Property like *Varnya* (complexion enhancer)along with *Rasayan* may help in *Twak Roga* (skin diseases) due to improper use of Naga . Has *Pramehagna* activity (Antidiabetic activity), may be used in *Prameha* (Diabetis) due to improper use of *Naga. Ruchikarak* and *Agnidiptikara* property(increasesappetite), so use in *Agnimandya* (Dyspepsia) ,*Udarasula* (pain abdomen), *Anaha* (flatus formation) which occurs due to improper use of *Naga .*It has *Vataprakopak Samak* property, so plays role in *Asthi Sotha* , *Asthi Vedana* (pain and inflammation in bones) ,*Pakshyaghat* (paralysis) *, Bahu Nischesta* (loss in function of arms) ,*Ansa Sotha* (Inflammation of shoulder), *Sandhi Vedana* (joint pain).*Swarna Bhasma* composition formulations are readily used for *Pandu Roga* (anaemia)

**5) *YASADA-HARITAKI***8

S.N*-Terminalia chebula*, Family-Combretaceae.Has *Deepan, Pachan* (Appetizer & digestive) *,Anuloma* (carminative) *, Krimighna* (antihelmintic )property so use for *Ajirna* (indigestion)*, Vaman* (vomit).Has *Tridoshahara* (neutralisation of *tridosha*)effect specially *Vatashamak* (neutralizing vata dosha)actionand *Balya* (strength) for *Nadivahasamsthan* (Nervous system) , so use in *Vatavyadhi* (predominance *Vata* disorder), *Bhrama* (vertigo).It has *Kusthaghna* (skin diseases) & *Rasayan* (Antioxidant) action so use for *Kustha* (skin diseases) and *Kshaya* (emaciation). *Pramehagna* (anti-diabetic)property and methanolic extract of *T.chebula* has proven its usefulness in *Prameha* (Diabetes).

***BAL***[9 S.N-*Sida cordifolia* Family- Malvaceae. Has *Vata, Pitta Saman* (neutralization *Vata-Pitta* *Dosha*) property, so use in *Vatapaitik Vikara* (Disorders of *Vata-Pita*) & has *Nadibalyakar* (nerve strength)property for *Vatavaha Samsthan* (Nervous system),so used in *Bhrama* (vertigo)*.* Ethyl acetate & methanol extract of roots of *S.cordifolia* has anti-inflammatory property while aqueous extract of *S.cordifolia* leaves has both anti-inflammatory & analgesic activity. These properties is use in *Vatavyadhies (Vata* predominant disorder*).* Has *Balya*, *Bruhana,* *Ojavardhaka* property, *Bala Virya Samrudhikara* (Improves physical strength, virility & intellect) and anti-oxidant property proves its use in *Kshyay* (emaciation). Its *Hrudaya* property(Cardio protective ) is due to aqueous extract, leads to decrease in systememic blood pressure, heart rate and may show action in *Hruday Pida* (Cardiac pain).Its *Deepana* –*Pachan* property show action in *Agnimandya ,*so may be used in *Udara Roga* (Abdominal diseases).

**CONCLUSION:**

*Ayurveda*, shows the pathway to lead a healthy life by preventing as well as curing the diseases. Here *Acharyas* have replenished classical texts with multifarious formulations. The content of these formulations are from different sources that may be either plant, animal or mineral origin based. These selected ingredients of formulations especially which are mineral origin must undergo all pharmaceutical steps meticulously as per classical texts. After following these steps these ingredients also should attain all *Siddhi Lakshyans* (test of perfectness) so that safe formulations can be formulated and thus it doesn’t hamper human health. If these pharmaceutical steps are not followed orderly several ill effects may arise and to counterpoise these many natural organic drugs are mentioned .So pharmaceutical individuals or physicians who are involved in creating these medicines must be well informed about the said realities. Thus this article emphasizes about the Ayurveda and phytochemical properties found in a natural drug that helps to pacify ill effects of unprocessed raw material specially *Dhatu* (metal) and lay out a brief and beneficial description for all persons concerned in this field.

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