

Versatility of Ayurvedic *Loha* Preparations-Conceptual Study

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ABSTRACT

Ayurveda is one of the authentic sciences and is a system of indigenous medicine which systematizes and applies the knowledge about health and disease. After the development of *Rasashastra*, *Ayurveda* made a landmark in the history of medicine by its judicious use of herbo-mineral preparations.

Rasashastra is the Pharmaceutical branch of ayurveda which deals with preparations of various metals and minerals to achieve the most therapeutic efficacy. *Loha* is one of the important metals used in *ayurvedic* classics. In *Samhitas*, *Loha* is used in powder form called as *Ayaskriti*. In classics detailed descriptions are available about the preparation of *Loha Bhasma* and their therapeutic uses. *Loha bhasmas* is having different therapeutic utilities as like *Pandugna*, *Balakara*, *Vrsya*, *Rasayana*, *Vajikara* etc. Hence an attempt has been made to verify *Loha* in different aspects of its utility in human body.

KEYWORDS: AYASKRITI, LOHA, RASAYANA

INTRODUCTION

Iron is essential nutrient of human body. The main source of iron is from food we eat, now a days junk foods are the prime cause for nutritional deficiency, So here Iron supplements play a vital role in overall nourishment of body. Iron is the 4th most abundant metal found among all the elements. The chief component of iron is to form haemoglobin, red blood cell protein whose main purpose is to transport oxygen in the blood.

Loha kalpas are the unique compound formulations in *ayurveda* for over all nourishment of *dhatu*s in the *sharira*. *Rasa ratna samucchaya* mainly deals with *Rasayana loha kalpa* giving it a prime importance¹. *Loha kalpas* are widely used in *Pandu Roga*, *Kamala*, *Shweta Pradara*, *Ganda mala*, *Anartava*, *Yakrit Vikaras*, *Hrudroga*, *Vishamajvara*, all types of *Shosha* etc.

Hence an attempt has been made to understand the probable mode of action in most of the systems of body.

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Prevalence and importance: The prevalence of iron deficiency is higher in rural areas. In India, the prevalence is high because of low dietary intake, poor bio-availability of Iron and Infectious diseases such as malaria, hook worm infestations are manifested.

The population of India is increasing at a rapid rate and most of the people are living under poverty line, which cannot get qualitatively and quantitatively sufficient diet. Therefore there is a need of hour to provide effective medicines with least side effects for the same.

Dietary supplements-Rich- Egg yolk, Oysters, Dry beans, Dry fruits, Wheat, Yeast.

Medium- Meat, Chicken, Fish, Spinach

Poor- Milk and its products.

Loha: *Loha* is one among the *Dhatu varga dravya*, *Ayaskruti* & *Loha Rasayana* are the primitive uses of iron in classics. *Loha* is one among the most important *Rasa dravya* which is known for its hardness. *Loha* is processed in *go- mutra* and

extensively used therapeutically as *Ayaskriti* or as *loha Rasayana* before the evolution of *Rasashastra*. In later development of *Ayurveda*, *Loha Bhasma* got originated. As free molecule of *Loha* is non-homologous and very toxic to the human body, it must be converted into homologous form by converting into *bhasma*. This *Loha bhasmas* were widely used for the treatment of wide range of diseases like *Pandu Roga*, *Kamala*, *Shweta pradara*, *Krimi*, *Grahani*, *Gulma roga*, *Anartava*, *yakrit vikaras*, *Arsha*, *jvara*, all types of *Shopha* etc².

Synonyms of Loha: *Ayasa*, *Kalayasa*, *Tikshanaka* etc.

Loha in different Forms → *Mandura* (Iron oxide), *Swarna Makshika* (Copper pyrite), *Kasisa* (Ferrous sulphate), *Gairika* (Iron Oxide), *Vimala* (Iron pyrite), *Shilajit* & *Abhraka*

Iron Absorption: Most of the Iron is absorbed in duodenum then the uppermost part of intestine. Iron is mainly absorbed into 2 forms-

1. Heme Iron-It is the most predominant iron containing substance found in animal sources, It is constituent of proteins/Enzymes and is easily absorbed.
2. Non Heme Iron-It is less absorbed and is found in plant sources. It contains Iron in Ferric form.

Table no.1: Ferric and Ferrous form of Iron in *Rasadravyas*³.

Si.no.	Rasa Dravyas	Chemical composition	Ferric Iron	Ferrous Iron	Percentage of Iron
1.	<i>Loha</i>	Fe(Iron)	-	+	98.6%
2.	<i>Kasisa</i>	FeSO ₄ .7H ₂ O (Ferrous sulphate)	-	+	79.9%
3.	<i>Mandura</i>	Fe ₂ O ₃ (Iron Oxide)	+(59.14%)	+(26.7%)	62.7%
4.	<i>Gairika</i>	Fe ₂ O ₃ (Red Iron oxide)	+	-	70%
5.	<i>Vimala</i>	Fe ₂ S ₃ (Iron Pyrite)	+	-	46.6%
6.	<i>Makshika</i>	CuFe ₂ (Copper pyrite)	+(25%)	+(5.7%)	25%
7.	<i>Abhraka</i>	Al(SiO ₄) ₃	+	-	20.92%

Advantages of Ayurvedic Supplementation: In rising health concerns of Iron deficiency modern medications have adequate supplements in form of ferrous sulphate, ferrous gluconate, ferrous fumarate etc., But all of these have side effects like epigastric pain, nausea, vomiting, bloating, staining of teeth, metallic taste, colicky taste, constipation etc.,

Ayurvedic medication on the other hand can reduce the side effects and can substantially increase the haemoglobin level and also improve the overall health of the patient.

Bio enhancers in Ayurveda-

Gomutra-It acts as anti-oxidant and protects cell against the effect of free radicals. It helps in stimulating erythropoietin hormone factor, which plays a key role in production of RBC.

Triphala-Contains *Amalaki* which is rich source of ascorbic acid and it facilitates conversion of ferric to ferrous form of iron. It acts as anti-oxidant.

Tamra-It is an important and excellent source of anti-oxidants. *Tamra* acts as adjuvant in synthesis of haeme and in the formation of RBC. It stimulates the immune system to fight against infections, to repair injured tissues and to promote healing. It also helps to neutralize free radicals which can cause severe damage to cells.

Various concepts of Loha-

Balya and Rasayana-*Rasa vagbhatta* specifies *Loha* as best *rasayana*. In *rasa ratna samuchhaya*-26th, 28th

chapter are mainly dealt for *rasayana* purpose, among them 28th chapter is exclusively kept for only *Loha rasayana kalpas*. This signifies the importance of *Loha* as *rasayana*.

Medohara- *Loha* here has got *lekhana* Property, which removes excessive fat and clears various toxins from the body; It also does *pachana* of *Drava* and *kleda* and does *Rakta vardana*. Eg-*Mandura guggulu*. If Iron levels are low then, it leads to fatigue, person becomes anaemic and oxidization of fat is reduced, hence to burn fat, body requires Iron.

Kustagna- According To *Rasa Tarangini*, *Kasisa* is mentioned as “*Visheshataha Switraharam*” and emphasise the importance of it in treating *Switra roga*, Eg-*Swetari yoga*. In modern perspective, during melanin synthesis, researches have led to the fact that Iron catalyses the formation of melanin pigment⁴-This substantiates the efficacy of *Kasisa* in *Switra*.

Chakushya- According to *Rasendra sara sangraha*, *Saptamruta Loha* also called as *Timirahara Loha*. Here Iron is helpful in form of Lactoferrin which is naturally occurring iron binding glycoprotein, it is typically found in fluids like saliva, and tears. Topical application of lactoferrin plays an important role in maintenance of healthy ocular surface of eye⁵.

Udararoga- *Gairika* is drug of choice having *madhura*, *kashaya rasa*, *snigdha guna* and *sheeta virya* –helps in relieving vitiated *pitta dosha*, it is used as topical medicine in *udarda* and *kandu*.

In case of peptic ulcers, *Helicobacterium pylori* form a major cause. It colonizes the mucosal lining of stomach forming a ulcer, hence it is not able to survive in oxygen rich surroundings, Here as *Gairika* containing ferric oxides works as bacteriostatic as well as bacteriocidal action⁶. Eg- *Laghu sootshékara rasa*.

Vishagna- *Gairika* and *Swarna makshika* is called as *Vishagna dravyas*, in *sushruta samhita*, In case of *Mandala visha*(viper bite)- *Gairika* is given internally with *madhu*. *Gairika* nullifies the influences of *visha* within the body. Iron combines with arsenic forming ferrous arsenate which is insoluble salt, It reduces the arsenic from absorption and helps to eliminate toxins from body. Eg- *Dushivishari agada*

Ropana- *Kasisa* having *lekhana* and having wound healing property is effective in post-operative wound dressing and in 1st and 2nd degree treatment of *arsha*. Eg-*Kasisadi taila*, *Kasisa* is also a drug of choice for *vrudhhi* of *rakta dhatu* and improve uterine blood circulation.

Vrushya- *Swarna makshika* due to its *madhura rasa*, *guru* and *snigda guna* it is very effective in erectile dysfunction and impotency. Eg-*Chandrodaya rasa*

In male reproductive system, sertoli and leydig cells are important sources of ferritin, This ready source of iron does development of spermatozoa. And increase testicular oxygen levels, due to high proliferation rate, high O₂ demand, so to compensate it, iron and copper is needed⁷.

DISCUSSION:

Loha kalpas are the unique compound formulations in *ayurveda* used for over all nourishment of *dhatu*s of the body. In *Rasa ratna samuchayya*, 28th *adhyaya* only deals with *Rasayana Loha kalpas*, all these show the importance of *Loha* as *rasayana*. A simple change in method of preparation and ingredients can bring a change in the action, indication, the efficacy in medicines, hence it is need of the hour to critically analyse the formulations and rationality behind it. *Loha Kalpas* are not only meant for nutritional

deficiency disorder or in *pandu roga*, they are given in various pathological conditions.

CONCLUSION:

Loha Kalpas are the promising answer for the search of safe and effective Iron preparations. They can be much safer, with wide range of utility and more acceptable with minimal and no side effects and more acceptable than the present day haematinics of modern medicine. *Loha kalpas* are not only meant to deficiency of iron, they mark an important role in nourishment of all *dhatu*s. They are highly effective and safe with least side effects.

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