TREATMENT OF ANAEMIA WITH SPECIAL REFERENCE TO IRON IN ANCIENT INDIAN MEDICINE AYURVEDA: A HISTORICAL PERSPECTIVE

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ABSTRACT

The two main texts of Ayurveda viz. Charaka Samhita and Sushruta Samhita, which were said to be written around 1500 B.C. mentioned the use of iron. Iron powder processed along with herbs like Amalaki (*Emblica officinalis*), a rich source of ascorbic acid, is indicated in Pandu (anaemia). Vagbhata, a 4th Cent. A.D. author of Ashtanga-Hridaya considered iron as the best among drugs used for Pandu (anaemia). Use of iron in modern medicine for anaemia dates back to 18th and 19th centuries.

INTRODUCTION:

Human being is thriving to get relief from diseases since time immemorial. Human beings in ancient times were also troubled with many diseases with which we are suffering now-a-days. In those days also scientists struggled hard to find solutions for various medical problems with available facilities. By studying ancient medical literature, one can perceive the problems of ancient people and solutions adopted by those people. Ayurveda is one such ancient medical science, which is still in practice in India and which can give such information. Purpose of present paper is to mention the description and treatment of anaemia mentioned in Ayurveda so as to study the ancient prescriptions for this disease with special reference to iron preparations.

Caraka Samhita and Susruta Samhita are the two main depositories of Ayurveda. The former deals mainly with medicine and the latter with surgery. Ātreyā and Dhanvantary are two main teachers of Ayurveda whose disciples wrote the texts of Ayurveda Viz. Agnivesa Samhita and Susruta Samhita (Samhita means collection). They are said to be lived as early as 1500 B.C. These two texts were thoroughly edited and systematized.

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Caraka edited Agnivesa Samhita after whose name it became Caraka Samhita. Susruta Samhita remained to be called with the same name. Exact date of Caraka is disputed. Historians put him between 600 B.C. to 100 A.D. (Ray 1965). Susruta Samhita is edited by Nagarjuna and Candrat, who are said to be lived in third to fourth centuries A.D. (Ray et al 1980) and 10th century A.D. (Šarmā, 1975) respectively. Exact date of the oldest existing manuscripts of both these Samhitās are not known. Caraka Samhita and Susruta Samhita described preventive and curative aspects of diseases. Etiological factors, prodromal symptoms, symptoms, prognosis and treatment of various diseases have been explained in both the texts Anaemia is one among such diseases which needs special attention.

TREATMENT OF ANAEMIA IN CARAKA SAMHITĀ:

General picture of anaemia mentioned in Caraka Samhita is, deficiency of blood, fat, ojas, looseness of body parts and abnormality of complexion (Šarmā, 1983). Principles of treatment of anaemia explained in Caraka Samhita are:

The patient of anaemia after unction should be subjected to strong emesis and purgation. After evacuation he should be managed with wholesome diet such as old rice, barley and wheat with soups of green gram, pigeon, pea and lentils or meat soup of wild animals and birds. Medicament should be administered to them according to doṣa and as specific to the disorder. (Šarmā, 1983, p. 276).

Various medicated ghees are prescribed for anaemia in Caraka Samhita. Interesting thing is prescription of iron preparation for anaemia. One such prescription reads as follows (Šarmā, 1983, p. 279).

Powder of Trīkatu (fruits of Piper longum, Piper nigrum, rhizome of Zingiber officinale), Trīphalā (fruits of Terminalia chebula, Terminalia belerica, Emblica officinalis), Mustā, (Cyperus rotundus), Viḍāṅga (fruits of Embelia ribes), Citraka (root of Plumbago zeylanica) all in equal parts are mixed with nine parts of iron powder. This (Navāyasa) powder formulated by Kṛṣṇatreyā is taken with honey and ghee, alleviates anaemia, heart disease, skin diseases, piles, and jaundice. Swānāmākṣika (copper iron pyrite processed) and Maṇḍūra are also indicated in anaemia. Maṇḍūra means iron pieces collected from places where iron is melted, and various instruments were prepared by blacksmith. These iron particles exposed to atmosphere more than 100 years...
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should be collected and used for therapeutic purposes. Iron becomes rusted and converted completely into iron oxide ($\text{Fe}_2\text{O}_3$) due to exposure to atmosphere for a long time, and this is purified and used in Ayurveda. Among other important herbal preparations, Dhātri avaleha and Dhātryāriṇa, the two drugs mainly prepared out of fruit juice of Āmalaki ($\textit{Emblica officinalis}$) are indicated in anaemia.

The process in which iron is used for therapeutic purposes is mentioned in Caraka Saṃhitā elsewhere (Śamrā, 1983 p. 22).

The paper like pieces of sharp iron four fingers long and thin like sesame seeds should be heated till they are red hot. Then they should be dipped in decoction of triphala, cow urine, alkali prepared out of iṅgūḍī ($\textit{Balanites aegyptiaca}$ (Linn.) Delile) and Palāśa ($\textit{Butea manosperma}$ (Lam.) Kuntze), Lavaṇa (Salt). When they are transformed like collyrium they should be powdered finely. This powder mixed with honey and juice of Āmalaki fruits ($\textit{Emblica officinalis}$) should be made into a linctus which should be kept in a ghee pitcher and stored for a year in granary of barley, stirring it from all sides every month. After the end of year it should be taken mixed with honey and ghee.  

Principles of treatment of anaemia mentioned in Suśruta Saṃhitā (Śastri, 1974) are almost same as those of Caraka Saṃhitā. Suśruta mentioned fruit juice of Āmalaki ($\textit{Emblica officinalis}$) and he mentioned iron powder along with Trikāt, Viḍāṅga powder and turmeric or Triphalā powder, Suśruta mentioned the use of Manḍāra.

Vāgbhaṭa, a 4th century A.D. author of Āṣṭāṅga Hṛdaya (Paradkar, 1982), credited iron as the best among drugs used for anaemia. In this way the important text of Ayurveda mentioned the use of iron in anaemia.

Later development in the use of iron is iron bhasma. Process of iron bhasma is fully established by 13th cent. A.D. which is compiled basing on earlier works. Chemically iron bhasma is $\text{Fe}_2\text{O}_3$.

BRIEF HISTORY OF USE OF IRON IN MODERN MEDICINE:

In the sixteenth century A.D. the causative role of iron deficiency in the then prevalent green sickness or chlorosis of adolescent women began to be recognized. Sydenham is properly credited with identifying iron as a specific remedy to take the place of bleeding and purgings. In 1713,
Lemary and Geoffry provided more direct evidence that iron was present in blood (ash). In 1832, the French physician Pierre Blaud wrote that the malady chlorosis arises from a faulty formation of blood as a result of which the blood is an imperfect fluid or the colouring matter is so defective that is no longer suitable for stimulating the organism and maintaining the regular exercise of its functions. He reported a rapid cure of 30 patients given a mixture of equal parts of ferrous sulphate and potassium carbonate. The treatment of anaemia with iron followed the principles enunciated by Sydenham and Blaud. In twentieth century various aspects of iron metabolism were observed. (Basing on Goodman & Gillman, 1980).

DISCUSSION AND CONCLUSION:

More than 2000 years ago iron is indicated in anaemia in Ayurveda. Even in the absence of facilities also Ayurvedic Scientists established the clinical use of iron for anaemia. Constant observation of patients of various diseases might have led them to this finding. One such clue is, in the prodromal symptoms of haemorrhagic disorders, iron smell is mentioned. Probably this observation might have prompted the use of iron in anaemia. Role of stomach and liver in the production of blood is well established in Suśruta Samhitā and Aṣṭāṅga Hṛdaya (Dwārakānāth, 1959), even though the presence of iron in blood is not mentioned in the books. Along with iron preparations, juice of Āmalaki or Triphalā, in which Āmalaki is present, is extensively indicated in anaemia. Āmalaki is rich source of ascorbic acid. Ascorbic acid is known to increase the absorption of iron. In this way Āmalaki facilitates absorption of iron whether dietary or supplementary. Pharmacologically also Āmalaki is an important drug.

In the preparation of iron Āmalaki juice or Triphalā is extensively mentioned. Triphalā facilitates conversion of iron into iron oxide. In this way by adding Triphalā during preparation and as an adjuvant with iron Ayurvedists achieved optimum use of iron particularly in anaemia. Māṃlūra, the iron which is converted into iron oxide by constant exposure to atmosphere because of its presence in earth for years, is also indicated in anaemia. Turmeric is other important herb indicated in anaemia. This may work on liver and helps in anaemia. Role of liquorice (Yaśṭīmadhu) needs further clarification.

In this way use of iron powder which is processed with Triphalā, a rich source of ascorbic acid, is well established in Ayurveda more than 2000 years ago.
REFERENCES


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