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GENERAL INTRODUCTION OF IRON DEFICIENCY ANAEMIA AND ITS MANAGEMENT ACCORDING TO AYURVEDA

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ABSTRACT

Nutritional iron deficiency anemia is the most common cause of anemia and a global public health problem among young children and pregnant women. Blood loss, malabsorption is the common cause of iron deficiency anemia. Pandu roga is a clinical entity with great resemblance to iron deficiency anemia. Pandu roga is Pitta pradhan vyadhi. In Pandu roga tissue metabolism gets affected due to vitiated Doshas which in turn into Dhatu- shyathilya in all Dhatu. There is a predominance of paleness all over the body. Rasavaha and Raktavahasrotasas are chiefly involved in the pathogenesis of Pandu. So, here is a case report of 21 years old female patient with iron deficiency anemia who was given Ayurvedic formulations in the line of treatment of Pandu roga along with dietary supplements rich in iron for a period of one month and marked improvement in symptoms (i.e., swelling was reduced, pallor absent, she was feeling energetic, hair fall (10 strands/day), palpitation had also decreased) with increase in hemoglobin level (i.e., from 8.6g/dl to 12.7g/dl) in a very short duration of time. The formulations help in breaking the Samprapti of Pandu roga. This shows the efficacy of Ayurvedic medicine in the treatment of iron deficiency anemia (Pandu).[1]

KEYWORDS: *Iron, anaemia, pandu, Ayurveda.*

INTRODUCTION

Iron plays an important role in the body as it fuels haemoglobin, a type of protein that is found in red blood cells of our body and helps in blood production. Haemoglobin in turn helps in transferring oxygen in the blood from lungs to the tissues. Without sufficient iron in our blood, this process of oxygen transportation may suffer which could lead to fatigue. Less haemoglobin in your red blood cells causes iron-deficiency anaemia, the most common type of anaemia. Around 30% of the total world population is anemic and half of these, some 600 million people, have iron deficiency. Iron deficiency anemia occurs when iron losses or physiological requirements exceed absorption. Blood loss, malabsorption, physiological demands are the main causes for iron deficiency anemia. Worldwide, hookworm and schistosomiasis are the most common cause of gut blood loss.[2] Iron is involved in the synthesis of hemoglobin and is required for the transport of electrons within cells and the number of enzyme reactions. Non-haem iron in cereals and vegetables is poorly absorbed but makes a greater contribution to overall intake, compared to well-absorbed haem iron from animal products.

Fruits and vegetables containing Vitamin C enhance iron absorption, while the tannin in tea reduces it. There is no physiological mechanism for the excretion of iron, so hemostasis depends on the regulation of iron absorption. This is one of the most important nutritional causes of ill health in all parts of the world.[3] At times of rapid growth, such as infancy and puberty, the iron requirement increases and may outstrip absorption. The complications of iron deficiency anemia include:- Increased risk of infections, heart conditions, developmental delay in children, pregnancy complications, depression.[4] The investigations that can be done in this disease are CBC, Sr. Ferritin, iron, total iron-binding capacity (TIBC), etc. The management of iron deficiency anemia is oral iron replacement is appropriate (ferrous sulphate 200mg 3 times daily) for 3-6 months to replete iron stores. Many patients suffer gastrointestinal side- effects with ferrous sulphate, including dyspepsia and altered bowel habit.[5] The short-term prognosis for most patients is excellent. However, if the undrlying cause is not corrected, the prognosis is poor. Considering Panduta (pallor) as the predominant sign, the disease is termed Pandu roga. The correlation of iron deficiency anemia (IDA) can be made with Pandu roga, because of the predominance of Panduta or pallor in the whole body. ron deficiency anemia (IDA) is a global public health crisis, so also in India. As per the World Health Organization's report, half of the total anemia is IDA. Ayurveda offers several formulations for the management of IDA. Given in this context, a systematic review was

carried out to understand the role of Ayurvedic formulations for the management of IDA. For this purpose, articles were obtained from PubMed and through hand search process. Of the 37 articles identified, 10 articles were finally selected for the review. Of the 10 studies identified, 3 studies were (n = 10) exclusively focused on pregnant women, 2 studies (n = 10) were exclusively focused on pediatric age group, 1 study (n = 10) was exclusively focused on geriatric anemia and 4 studies (n = 10) were focused on general population. The response of most of the Ayurvedic formulations was better than Allopathic formulations and there was no untoward effect as observed with iron salts. Statistically significant results were obtained in favor of most of the Ayurvedic formulations in subjective and hematological parameters. Among six different formulations, Sarva-Jvara-Hara Lauha is suggested as the drug of choice for IDA as the Hb regeneration with this drug is highest- 0.16 g/dl/day, as reported by one of the studies. In addition, Punarnavadi Mandura is currently used as an anemia correcting agent at the community level promoted by the National Rural Health Mission and is included in the Accredited Social Health Activist's drugs kit. As most of these Ayurvedic formulations are found effective against IDA, their usage should be fostered at all level in addition to modern allopathic medicines. Iron deficiency anemia (IDA) is a global public health crisis, so also in India. As per the World Health Organization's(WHO's) report, there are about two billion anemia cases globally, of which half of them are IDA.[1] It is a serious health problem as it causes general debility, lethargy, lassitude, suboptimal work performance and in certain situations mental retardation, poor intelligence and abnormal immune response. Anemia is the late indicator of iron deficiency in the human body, hence the prevalence of iron deficiency is estimated 2.5 times higher than that of anemia.[1,3] Furthermore, anemia and iron deficiency lead to substantial loss of physical productivity among the adults. Similarly, IDA during pregnancy is associated with maternal mortality, preterm labor, low birth weight, and infant mortality. IDA among children affects their cognitive and motor development and increases the susceptibility of infections.[4] As per the third National Family Health Survey (NFHS), conducted in 2005–2006 in India, the prevalence of anemia among Indian population was 70% in children aged 6–9 months, 55% in females aged 15–49 years, and 24% in males aged 15–49 years. The state of IDA is being managed with the supplementation of external iron containing drugs for which several types of modern medicines are available in the market.[6] These modern iron formulations contain one or the other types of iron salts such as, ferrous fumarate, ferrous sulfate, ferrous glycine sulfate, ferric ammonium citrate, ferric hydroxide polymaltose complex, iron choline citrate, iron dextran, ferrous calcium citrate, iron sorbitol citrate, colloidal iron hydroxide, ferrous gluconate, ferric hydroxide, and

ferrous succinate.[7] It has been further reported that the long-term treatment of IDA with these drugs is associated with constipation, heart burn, nausea, gastric discomfort and diarrhea. The Ayurvedic anemia correcting agents are found to be practiced since centuries.[9] With this background, an effort was made to review various types of Ayurvedic formulations that have proved efficient in the management of IDA.

DISCUSSION

In Ayurveda, the disease Pandu roga can be compared with that of IDA, especially owing to the clinical manifestation of Panduta or pallor in the whole body.[8] The concept of iron deficiency anemia in Ayurveda The formation and pathogenesis of a disease in Ayurveda is linked with the vitiation of Dosha (Humors). Ayurveda describes three different humors; Vata, Pitta and Kapha, which are responsible for healthy state or causation of disease. Pandu Roga is predominantly a result of vitiation of Pitta Dosha vitiation along with other Doshas, thus Pandu Roga is a Tridoshaja (of the three humors) disease. The vitiation of Pitta Dosha leads to discoloration of the skin and pallor (Pandu) owing to reduced blood (Alpa Rakta) or vitiation of blood (Vidushya Rakta). Iron deficiency is the most common cause of anemia in LMICs, however micronutrient deficiencies such as folate, Vitamin B12 and Vitamin A deficiencies and other conditions such as inflammation, parasitic infections and inherited disorders can also cause anemia. Consumption of diet rich in iron could be the ideal way for control of anemia in the majority of the population. However, poor intake of dietary iron and the presence of iron absorption inhibitors necessitates iron supplementation. In India, oral Iron-Folic Acid (IFA) tablets are supplemented to high-risk populations such as pregnant and lactating women, under-five children (IFA syrup), children of 6–10 years, adolescents and women of reproductive age group. However, the undesirable side effects of oral IFAs, such as epigastric discomfort, nausea, gastritis, diarrhoea, or constipation, leads to poor adherence to oral IFA supplements.[9] The poor adherence to IFA tablets was evidenced by studies conducted in various parts of India and also in NFHS-4 where only 30% of the pregnant women consumed at least 100 IFA tablets. Complementary and Alternative Medicines or Traditional Medicines, which includes Ayurveda, Unani, Siddha, and Homeopathy (AYUSH) has been widely in India since the ancient period. Acknowledging the wider acceptance of AYUSH, Government of India has integrated the traditional systems of medicine (AYUSH) with the allopathic system, especially in rural areas.[10] Each public health sector facility has a separate department for AYUSH and the AYUSH medical officer manages a wide range of diseases.[11] Among the AYUSH system of medicines, Ayurveda refers to “Science of life” or

"Science of longevity," which is being practiced in India since 2500 BC.[12] Around 70% of the rural population in India follows the Ayurvedic system of medicine.[13] Hence, the Ayurvedic system can be explored for control of high burden of anemia in India. In Ayurvedic classical texts, anemia is referred to as "Pandu" meaning pallor, which is one of the common symptoms of anemia. An Ayurvedic drug "Tablet Punarvadu Mandur (ISM Preparation of Iron)" has already been added in Accredited Social Health Activist (ASHA) drug kit for management of anemia in pregnancy. When it comes to Ayurvedic therapy for anaemia, diet is king. The natural way to increase iron levels is to eat more iron-rich foods like lentils, sesame seeds, and leafy greens. Herbs with iron-enhancing characteristics, such as Punarnava, Triphala, and Amalaki, are also recommended for ingestion according to Ayurveda. Iron supplementation and improved absorption and assimilation are two goals that these herbs are thought to accomplish. Panchakarma is a detoxification procedure that is often used in Ayurvedic treatments to cleanse the body of harmful substances and restore its vitality. It is believed that Panchakarma treatments, such as Shirodhara, which involves pouring heated herbal oil across the forehead, promote blood circulation and iron absorption. Abhyanga is a full-body massage that uses herbal oils to improve nutrition absorption and vital energy flow.[9,10] Dietary suggestions and physical therapy are just one of Ayurveda's comprehensive approach. Anaemia treatment plans should also include stress management. The therapy regimen incorporates Ayurvedic techniques like meditation and Yoga.[11] These techniques promote a balanced and harmonious condition by reducing stress and improving general well-being. Iron deficiency anaemia therapy options in Ayurveda are intriguing, but it's important to remember that results may differ from patient to patient. A person may benefit from a well-rounded treatment plan that incorporates both conventional and Ayurvedic practices by consulting with both types of healthcare providers.[12] Iron deficiency affects around 600 million individuals, which is almost half of the world's anaemic population. More than thirty percent of the total population is represented by this. The illness known as iron deficiency anaemia occurs when the body's iron requirements are greater than its ability to absorb.

CONCLUSION

This review concludes that the administration of ayurvedic drugs could be an effective approach for prevention and management of anemia in various age groups. Major advantage with ayurvedic formulations is that they are safe and do not result in any adverse reactions.

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