

## CLINICAL EFFICACY OF NAVAYAS LAUHA IN THE MANAGEMENT OF PANDU ROGA W.S.R. TO IRON DEFICIENCY ANAEMIA

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### ABSTRACT

Today's fast pace of life it is difficult to follow the ways of healthy living as a consequence of which people are getting predisposed to many diseases. One of these diseases is pandu. It is very common in the developing countries like India because of faulty diet habits, Unhygienic living standards like open sanitation and in particular the most common suffers are females and childrens. Nearly one third of the total population is Anaemic and half of these suffer from Iron deficiency anaemia (IDA).IDA is the most common type of anaemia met in practice and the most prevalent nutritional deficiency in the world. In Ayurveda, Iron deficiency anaemia can be correlated with

Pandu based on Clinical symptoms similarity. *Navayas lauha* is an iron containing Herbo mineral yoga used for the management of *Pandu*. In this study clinical efficacy of *Navayas Lauha* has been evaluated in Pandu W.S.R to IDA.

**KEYWORDS:** *Pandu*, Anaemia, *Navayas Lauha*.

### 1. INTRODUCTION

Ayurveda, the ancient system of medicine has been in vogue since the Vedic period or earlier being practiced by Aryans. It has been developed from Vedas and the pledged purpose of Ayurveda as a medical system is the maintenance, promotion of health and curing diseases.<sup>[1]</sup> Thus, Ayurveda was developed to safeguard *Arogya* (health) which is considered to be essential for the achievement of four tenets of life viz. *Dharma, Artha, Kama and Moksha*.<sup>[2]</sup>

Though Ayurveda is believed to be an offshoot of Atharva-Veda, it seems that as far as the medicinal knowledge is concerned it indicates towards Rig-Veda. Majority of person suffer from nutritional deficiency disease like anaemia which is described in Ayurveda as *Pandu roga*.<sup>[3]</sup> Anaemia is silent without symptoms; in the most severe form anaemia occurs along with various sign and symptoms like dyspnoea, anorexia, fatigue, pallor of skin, palms, oral mucosa etc.<sup>[4]</sup> *Pandu Roga* is a disease which is characterized by *pandu varna* and this Varna is like the colour of pollen grains of *Ketki* flower which is whitish yellow.<sup>[5]</sup> According to Modern medicine, management of anaemia includes iron preparation both parenterally and oral. Side effects of therapeutic dose are encountered like nausea, vomiting, headache, fever, pigmentation, epigastric pain etc.<sup>[6]</sup> Hence, there is a need to look for newer agents that have less adverse effect and better therapeutic utility. So, for the present research work, we selected a herbo-mineral compound- *Navayas Lauha* as a trial drug. *Navayas Lauha* is mixture of *Trikatu*, *Trimada*, *Triphala* and *Lauha churna* described by Acharaya Charaka in the management of *Pandu* just after the *Lauha churan*.<sup>[7]</sup>

## 2. AIMS AND OBJECTIVE

- (1) Screening of patients suffering from *Pandu Roga* on the basis of sign and symptoms.
- (2) To study an effect of ayurvedic formulation i.e. *Navayas Lauha* in the management of *Pandu roga* w.s.r. to Iron Deficiency Anaemia.

## 3. MATERIAL AND METHODS

Patients were randomly selected from Institute of Ayurveda And Research hospital, Jammu. All the patients were clinically diagnosed and registered properly.

## 4. CLINICAL STUDY

### 4.1 Inclusion criteria

Patients of either sex between the age group of 18-70 years with haemoglobin level 10 - 6gm% in females and 11 - 6 gm% in males.

### 4.2 Exclusion criteria

Long term infectious disease i.e. - T.B, R.A, AIDS, leprosy, Malaria, gout, malignancies and other systemic diseases like VHD etc. Pregnant and Lactating women. Patients who had Gastrectomy and who were not willing to be registered.

### 4.3 Criteria of assessment

**A. Subjective parameters:** Parameters to be assessed before and after the completion of clinical trial: Pallor, Fatigue, and Appetite.

**B. Objective parameters:** Hb gm%

### 5. Drug Profile

**Ingredients of Navayas Lauha-Haritaki, Amalaki, Bibhitaki, Shunthi, Pippali, Marich, Vidanga, Chitraka, Musta and Lauha bhasma.<sup>[8]</sup>**

**Table containing Ingredients of NAVAYAS LAUHA.**

S.No	Sanskrit name	Botanical name	Proportion
1	Amalaki	<i>Embellica officinalis</i>	1 Part.
2	Haritaki	<i>Terminalia chebula</i>	1 Part.
3	Bibhitaki	<i>Terminalia bellirica</i>	1 Part.
4	Shunthi	<i>Gingiber officinalae</i>	1 Part
5	Marich	<i>Piper nigrum</i>	1 Part
6	Pipali	<i>Piper longum</i>	1 Part
7	Vidang	<i>Embellica ribes</i>	1 Part
8	Chitrak	<i>Plumbago zeylanica</i>	1 Part
9	Musta	<i>Cyprus rotundus</i>	1 Part
10	Lauha bhasma	-	9 Part

**Table containing rasa panchaka of NAVAYAS LAUHA.<sup>[9]</sup>**

S.No.	Drug	Rasa	Guna	Veerya	Vipaka	Doshagnata
1.	Amalaki	Amla pradhana Lavana rahita Pancharasa	Guru, Ruksha, sheeta	Sheeta	Madhura	Tridosha- shamaka
2.	Haritaki	Kashaya rasa pradhana, Lavanarahita Pancharasa	Laghu, Ruksha	Ushna	Madhura	Tridosha- shamaka
3.	Bibhitaka	Kashaya	Ruksha, Laghu	Ushna	Madhura	Tridosha- shamaka
4.	Pippali	Katu	Laghu, Snigdha, Tikshna	Anusna sheeta	Madhura	Kaphavata- shamaka
5.	Shunthi	Katu	Laghu, snigdha	Ushna	Madhura	Vata- kaphahara
6.	Maricha	Katu	Laghu, Tikshana	Ushna	Katu	Kaphavata- shamaka
7.	Vidanga	Katu, Kashaya	Laghu, Ruksha Tikshana	Ushna	Katu	Kaphavata- shamaka
8.	Musta	Katu, Tikta, Kashaya	Laghu, Ruksha	Sheeta	Katu	Kapha- Pittashamak

9.	<i>Chitraka</i>	<i>Katu</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavata- shamaka</i>
10.	<i>Lauha Bhasma</i>	<i>Tikta, Kashaya</i>	<i>Guru, Lekhana</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Kaphapitta- shamaka</i>

Dose- 200mg OD orally.

## 6. Study Schedule- (Flow Chart)

Screening (Informed consent, Physical examination and laboratory investigations)



Baseline visit (Clinical and Ayurvedic parameter Assessment)



During treatment (Haemoglobin assessment)



At the end of medication period (Assessing drug compliance, physical and clinical assessment)

## 7. Study Procedure

Patients were enrolled in the study and enrolment day at baseline (Visit1), patient's demographic profile, medical history, family history particularly related to IDA, *Sharirik Prakriti*, and vital parameters were recorded. At the study site, data of all the patients were recorded in predesigned Case Report Forms(CRFs).<sup>[15]</sup> patients were taken and given *Navayas Lauha* 200mg OD orally.

## 8. Outcomes

Primary outcome measure was mean change in hemoglobin level after completing the trial from baseline.

## 9. DURATION OF THE TRIAL

Clinical trial was conducted for the duration of 45 days with the follow up after every 2 weeks to evaluate the therapeutic effect of the drugs. Observations made and results so obtained were computed statistically for appropriate conclusions. Changes in patient's status were noted and following points were taken into considerations for assessment of results. To assess the effect of therapy objectively, all the signs and symptoms were given scoring pattern depending upon their severity.

## 10. Criteria For Assessing The Total Effect of Therapy

Considering the overall improvement had shown by the patient in sign and symptoms, the total effect of the therapy has been assessed on the basis of percentage of relief obtained. 76% to 100% were completely cured, 51 to 75% were markedly improved and up to 25% remain unchanged.

## 11. RESULT

### Effect on Subjective Parameters

- ★ **Pallor**-mean Score before treatment was **2.47** which lowered down to **1.07** after treatment, which was **extremely significant**.
- ★ **Fatigue**-mean Score before treatment was **2.87** which lowered down to **1.33** after treatment, which was **significant**.
- ★ **Appetite**-mean Score before treatment was **2.0** which lowered down to **0.93** after treatment, which was **extremely significant**.
- ★ **Haemoglobin concentration**- mean Score before treatment was **8.71** which was increased to **10.13** after treatment, which was **extremely significant**.

## 12. DISCUSSION

It has been observed in this study that prevalence of anaemia in female is higher than in males, which may be due to inadequate dietary habits, less education, and unawareness about receiving extra iron containing diet etc. majority of patients were age group of 18-40 years, which is an ideal age for manifestation of anaemia, due to lactation, pregnancy and stress.

Maximum patients were belonging to *Vata Pittaja Prakrti* and we can assume that such *Prakrti* persons have a tendency to get *Raktadhatu kshaya janya rogas*, such as *Pandu. Navayasa lauha* was found highly effective in reducing the clinical symptoms of iron deficiency anaemia.<sup>[10]</sup> Symptoms of *Rakta dhatu kshaya* and *Ras dhatu kshaya* were present initially and these symptoms responded to therapy as *Navayasa lauha* is capable of producing *Raktadhatu prasadana* and *Rasdhatu Prinana*. Improvement in Fatigue, Pallor and appetite were noticed at the end of study. In patients treated with *Navayas Lauha*, highly significant relief was observed in symptoms pallor, fatigue, Appetite. Regarding Haematological values also results were highly significant. The study revealed that the selected management has better potential effects on *Pandu Roga* with the added advantage of being free from Side Effects.

### 13. Probable Mode of Action of Trial Drug

The probable action on *Samprapti ghatakas* can be understood from the properties of *Navayas Lauha* as follows: Most of the ingredients of *Navayas Lauha* possess qualities like *Tridoshahara*, *Deepana*, *Pachana*, *Hridya*, *Yakriduttejaka*, *Krimighna*, *Raktavardhaka* and *Rasayana*.<sup>[11]</sup> It contains well known *Rasayana* drugs like *Triphala*, *Vidanga*, *Pippali* and *Lauha bhasma* that provides adequate nourishment to the dhatus which may improve *Dhatu-shaithilya*, *Daurbalya* and *Ojogunakshaya*. As seen in the *Samprapti* of *Pandu Roga*, aggravated *Pitta Dosha* afflicts *Jatharagni*, leads to *Rasa Dhatu Dushti* and ultimately other dhatus disturbing the *Dhatu Poshana Parampa* leads to *Pandu Roga*.<sup>[12]</sup> The *Deepana*, *Pachana* properties of drugs like *Trikatu* and *Chitraka* corrects *Agnimandya* and alleviates *Ama* i.e., counteracts the poor digestion found in *Pandu Roga*.<sup>[13]</sup> Thus, breaks the pathogenesis of the disease. It also contains *Amalaki* which is a rich source of Vitamin c, helps in absorption of iron. It may increase the bioavailability of *Lauha Bhasma* and may also decrease the common hazards of oral iron therapy.<sup>[14]</sup> Moreover; *Amalaki* is *Amla Rasa Pradhana Dravya* which may increase *Rakta dhatu* because *Amla Preeti* is seen in *Raktalpata*. *Dravyas* like *Amalaki*, *Haritaki* and *Bibhitaka* have properties like *Tridoshashamaka*, *Dhatuwardhaka* and *Rasayana*. Also due to gentle laxative effect of *Triphala*, the effect of iron metal is prevented. Since, *Pandu* is a *Ruksha Guna bhuyishtha Vyadhi*, *Shunthi* and *Pippali* (*Snigdha Guna Yukta*) present in *Navayas Lauha* may have a significant action on the disease.<sup>[15]</sup> *Pippali* and *Vidanga* are *Krimighna*, thus they may be useful in *Mridhakshanajanya Pandu*. Also, *Pippali* in itself is *Raktavardhaka*. It also improves intestinal absorption and subsequently absorption of other drugs may also be improved. It is considered as a best *Rasayana* and improves General health and Immunity. *Maricha* is *Srotoshodhaka* so it may check *Rasavaha Srotodushti*<sup>[16]</sup> and help in the proper formation of *Rakta Dhatu*. Moreover, *pippali* and *maricha* have *yakrututtejaka* property; hence it improves liver function which is the moola of *Raktavaha srotas*. *Lauha Bhasma* due to its *Sheeta Virya* is *Pittashamaka*. It is also *Balya*, *Vrishya*, *Tridoshhara* and *Rasayana*. Moreover, *Bhasmas* due to their *sukshma guna* increase the absorption and bioavailability of the drug. Thus from the ingredients described above it can be stated that all the *dravyas* used in the combination in “*Navayas Lauha*” are effective over all the conditions described in pathogenesis of *Pandu Roga*.<sup>[17]</sup> It also contains a high percentage of iron. Hence, it can be concluded that ‘*Navayas Lauha*’ can be considered as very useful and a wonder drug in the treatment of *Pandu Roga*.

## 14. CONCLUSION

*Pandu* is a *Tridoshaja vyadhi* with main vitiation of pitta. Since *pitta* is responsible for the normal complexion of the body, loss of complexion takes place in *Pandu Roga*.

Psychological factors like *Kama*, *Chinta*, *Krodha* etc.<sup>[18]</sup> plays an important role in the cause of *Pandu* due to disturbance in the normal physiology of the body i.e., particularly digestive system of the body. *Pandu Roga* can be effectively compared with *Anemia* on the ground of its similarity in sign, symptoms, complications and treatment point of view because of iron being main ingredient. In modern medicine there is good treatment for *Anemia* with considerate results but still there are some side effects like intolerance, nausea, constipation etc. are to be overcome. Iron deficiency is the most commonly found *Anemia* and its main cause is improper Iron absorption in the GIT. *Anemia* is most common among females of child bearing age group, reason being menstruation, repeated pregnancies and abortions, improper and inadequate diet. Maximum numbers of patients of *Pandu* were from the urban population because of illiteracy, poor or inadequate diet and unhygienic conditions.<sup>[19]</sup> The study revealed that the selected management has better potential effects on *Pandu Roga* with the added advantage of being free from Side Effects. *Navayas lauha* was successful in producing significant symptomatic improvement in subjective parameters like Pallor, fatigue, appetite and Haemoglobin concentration. This study shows that *Navayasa lauha* is effective in the management of IDA.<sup>[20]</sup> However further scientific study is necessary. The study may also be conducted with varying doses, combinations and duration of treatment and with more resources and scientific parameters.

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