

**PRILIMINARY STANDARDIZATION OF VIDANGADYA LOHA AND DHATRI LOHA-
A POTENTIAL DRUG FOR PANDU ROGA****Dr. Anita Yadav^{*1}, Dr. Amit Kumar² and Dr. Manu R.³**¹PG Scholar Department of Kayachikitsa Parul Institute of Ayurveda Vadodara Gujarat-391760.²PG Scholar, Department of kumarbhratya, Parul Institute of Ayurveda, Vadodara, Gujarat, India.³Hod & Associate Professor, Department of Kayachikitsa, Parul Institute of Ayurveda, Vadodara, Gujarat, India.***Corresponding Author: Dr. Anita Yadav**

PG Scholar Department of Kayachikitsa Parul Institute of Ayurveda Vadodara Gujarat-391760.

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ABSTRACT

Pandu Roga is a disease, which is commonly found in our country. It is seen that nutritional deficiency is the major etiological factor of this disease in the developing countries like India. The incidence of the disease in both gender is large but females are majorly affected. Pandu Roga is most common disorder seen in human being. In ayurveda panduroga has been described in all samhita in detail., This Vidangadya loha and Dhatri loha are two preparation that are described in ayurvedic classics for the management in pandu roga.^[1] The drugs *Vidangadya loha*^[2] consists *Vidanga, Musta, Amalaki, Bibhitaka, Haritaki, Sunthi, Maricha, pippli, Pipplimula, Chavya, Chitraka, Devdaru, Lohabhasma, Gomutra* and Dhatri loha consists3 Dhatri, Shunthi, Maricha, Pippli, Nisha, Sarkara, Ksoudra, Ajya, Loharaj. Most of drugs of vidangadya loha improve Agni. So this compound was analyzed and standardized scientifically through qualitative quantitative analysis by physico-chemical parameters will help for the use of this formulation in *Pandu Roga*.

KEYWORDS: *Vidangadya Loha, Dhatri Loha, Anaemia, Pandu Roga, Iron Deficiency Anaemia. Agni, Agnimanda.*

INTRODUCTION

Ayurveda is the science of life which focuses on maintenances of positive health in healthy and eradication of ailments in diseased through its approaches, lifestyles practices.^[1] Pandu Roga is one of the diseases mentioned in Ayurveda characterized by the changes in the skin colour to white (shwet), yellowish (pita), greenish(harita), etcand is typically characterised by the presence of ketaki dhulinibha chaya(discolouration resembling the colour of the pandus flowers).^[2] It is mainly concerned with the vitiation of pitta dosha which in turn vitiates rakta and dhatus. Pandu roga as mentioned inayurvedic texts has very close resembles with the description of anaemia available in modern texts interm of Nidhan, Samprati, Lakshanas and Chikitsa. Anaemia which is most prevalent nutritional deficiency disease. Globally, 305 of the total world population are anaemic and half of these have iron deficiency anaemia. According to WHO, 50% of children and in 25% of men in developing countries.^[3] Iron deficiency and anaemia reduce the work capacity of individuals and entire populations, bringing serious economic consequences and obstacles to national development. Overall, it is the most vulnerable, the poorest and the least educated that are disproportionately affected by iron deficiency, and it is they who stand to gain the most by its reduction.^[4] In

India also, Nutritional iron deficiency is the commonest cause of anaemia.^[5]

The nearest correlation of iron deficiency anaemia (IDA) can be made with Pandu Roga, because of the predominance of Panduta or pallor in the whole body. A prominent diagnostic feature of Pandu Roga is the pallor on the skin which occurs due to the quantitative and qualitative deficiency of Rakta Dhātu caused either in the form of deficiency of haemoglobin and/or red blood cells (RBCs). Considering Panduta (pallor) as the predominant sign, the disease is termed as Pandu Roga.^[6] The regular response of iron deficiency anaemia to adequate amounts of iron is an important diagnostic and therapeutic feature. Oral administration of simple ferrous salts provides inexpensive and satisfactory therapy.^[7] But all allopathic iron preparations are gastric irritant and common side effects of oral iron include nausea, abdominal pain and either constipation or diarrhoea. Ferrous sulphate usually causes severe gastrointestinal side effects like gastritis, constipation/diarrhoea. Parenteral iron therapy may be required if iron cannot be absorbed from intestine and patient experiences intolerable gut symptoms.^[8] In Ayurved classics, thorough approach to the treatment of Pandu Roga has been described from Samhita Kala to Adhunik Kala. Various Shodhana and Shamana

treatments are enumerated in all the classics and Samgraha Granthas. Many more formulations advocated in Ayurved literature are being used successfully in recent clinical practice with good outcomes in the management of Pandu Roga as well as Iron Deficiency Anaemia.

AIMS AND OBJECTIVES

Pharmaceutical and phytochemical analysis of *vidangadya loha and dhatri loha* for pandu roga.

MATERIAL AND METHODS

- Collection, identification and authentication of raw drugs

- Preparation of drug at pharmacy
- Phytochemical analysis of compound drug

Collection, Identification and Authentication of Raw Drug:^[3] The raw drugs are identified and authenticated by the Dept. of Dravya guna, Parul Institute of Ayurveda, Parul University, and Vadodara. The raw ingredients were procured from Vadodara Gujrat. The ingredients and the parts used are given in table No 1.

Pharmaceutical source: The formulation Vidangadya Loha and Dhatri Loha are selected for the present research work shall be prepared in the pharmacy attached to Parul Institute of Ayurved; Vadodara as per the textual reference.

Ingredients of vidangadya loha-Table No 1.

Sr. No	Drug	Latin Name	Parts Used	Part
1	Vidanga	<i>Embeliaribes</i>	Phala	1
2	Musta	<i>Cyperusroyundus</i>	Kanda	1
3	Amalaki	<i>Emblicaofficinalis</i>	Phala	1
4	Bibhitaka	<i>Terminaliabellirica</i>	Phala	1
5	Haritaki	<i>Terminaliachebula</i>	Phala	1
6	Shunthi	<i>Zingiberofficinale</i>	Kanda	1
7	Maricha	<i>Piper nigrum</i>	Phala	1
8	Pippli	<i>Piper longum</i>	Phala	1
9	Pipplimula	<i>Piper longum</i>	Mula	1
10	Chavya	<i>Piper retrofractum</i>	Mula	1
11	Chitraka	<i>Plumbagozeylanica</i>	Mulatwaka	1
12	Devdaru	<i>Cedrusdeodara</i>	Kandasara	1
13	Lohabhasma	<i>Ferrosoferric oxide</i>	-	12
14	Gomutra			32 litre

Preparation of the Drug at Pharmacy

Prepare fine powder of drugs viz. Is vidanga, musta, haritaki, bibhitaka, amalaki, sunthi, maricha, pippali, pippalimula, chavya, chitraka, devdaru and loha bhasma, in prescribed quantity. All ingredients are mixed well to

form a homogenous mixture, to this mixture of gomutra is added & cooked well. Later pills were rolled of 250 mg weight each and then dried.

Indication – Kamla, Pandu

Ingredients of Dhatri loha table no 2.

Sr. no	Drug	Latin Name	Parts Used	Part
1	Dhatri	<i>Phyllanthusemblica</i>	Fruit pulp	1
2	Shunti	<i>Zingiberofficinale</i>	Fruit	1
3	Maricha	<i>Piper Nigrum</i>	Fruit	1
4	Pippali	<i>Piper longum</i>	Rhizome	1
5	Nisha	<i>Curcuma longa</i>	Rhizome	1
6	Sarkara	<i>Sachchromofficinarum</i>	Ext	1
7	Ksoudra	<i>Apismelifera</i>	Honey	1
8	Ajya	Ghee	Ghee	1
9	Loharaj	Iron	Incinerated Fe	1

Preparation of the Drug at Pharmacy

Prepare fine powder of drugs viz. is dhatri, sunthi, maricha, pippali, nisha, sarkara and lohabhasma, in prescribed quantity. All ingredients are mixed well to form a homogenous mixture, to this mixture gohrita and honey is added & triturate well. Later pills were rolled of 500 mg weight each and then dried.

Indication – Kamla, Pandu, Halimaka.

Phytochemical Analysis of Compound Drug: *Vidangadya loha and dhatri loha* was analyzed at parul pharmacy, Vadodara.

Physico-Chemical Analysis of drug -Table No 3.

Sr.No	Parameter Name	Vidangadya Loha	Dhatrhi Loha
1.	L.O.D	0.032%	0.02%
2.	Ash Value	12.5%	25.5%
3.	A.I.A	8.36%	21.37%
4.	W.S.E	1.15%	2.45%
5.	A.S.E	0.85%	2.3%
6.	HARDNESS	0.5	0.25
7.	WEIGHT VARIANCE	2.0 kg/cm ²	2.1 kg/cm ²
8.	GRAVITY WEIGHT	262 mg	530
9.	DISINTEGRATION TIME	16 minute	10 minute
10.	FRIABILITY TEST	0.205%	0.31%
11.	UNIFORMITY OF WEIGHT	6.0	6.8
12.	Ph- 10% solution	7	7
13.	COLOUR	Dark brown	Brown
14.	TASTE	Astringent	Sweet and kashaya
15.	Specific gravity	1.286	1.265

Chemical analysis of drug: - The chemical analysis of drug used for management of pandu roga was subjected to various chemical analytical test at parul ayurved pharmacy vadodara, with its prior permission and information. these tests are prescribed by CCRAS, the Ministry of health and family welfare, India for the standardization of the medicated oil and vati. they are as follows.

TLC (THIN LAYER CHROMATOGRAPHY)

TLC of the ingredient drugs and the final product was done at TLC conducting laboratory namely parul institute of ayurveda, limda, vadodara.

Solvent system: chloroform, ethylacetate, formic acid, ratio 5:4:1

Tank saturation – 30 min

Visualization – Day light.

Table no 4: TLC (THIN LAYER CHROMATOGRAPHY).

Vidangadya loha			Dhatrhi loha		
Colour of reflection		RF	Colour of reflection		RF
Long uv rays	Light yellow	2.7=0.45	Long uv rays	Dark brown	0.1-0.014
	Orange yellow	3.5=0.58		Green	2-0.294
	Light green	0.1=0.016		Dark yellow	3.2-0.0470
	Light green	5.9=0.983		Purple	3.9-0.5735
Short uv rays	Colour of reflection	RF	Short uv rays	Colour of reflection	RF
	Dark brown	2.7=0.45		Green yellow	0.1=0.014
	Orange	3.5=0.58		Light yellow	2=0.294
	Light orange	5.9=0.983		Yellow	3.2=0.5735

Table no 5: Comparative spots obtained after derivatisation (API).

Sr.No.	Name of the sample	No of spots	RF
1	VIDANGADYA LOHA	3	0.05,0.2,0.83
2	DHATRI LOHA	3	0.12,0.3,0.48

DISCUSSION

Churna form of this is having good result in pandu roga patient, but is not possible to everyone to do it regularly vati (tablets) is easy to take daily. The pharmacological studies already reported on the individual drugs, also favours the effectiveness of various contents of *vidangadya loha* and *dhatrhi loha* in disease pandu roga. that the main approach for treating anaemia is iron supplementation without correcting the metabolism as far as modern management is concerned whereas according to Ayurved Pandu is a Pitta dominant Tridosha disorder with involvement of vitiation of

Rasavaha Srotas. The symptoms of Rasavaha Srotas vitiation are similar to symptoms of Kapha vitiation. Thus, to reverse the Samprapti (pathogenesis) such formulation is needed which can counteract Pitta-Kapha and act at Srotas level and correct the metabolism thereby increasing iron absorption.^[9] Keeping this in mind for the present study, *Vidangadya Loha*^[10] and *Dhatrhi Loha*^[11] were selected for the clinical trials in the Iron Deficiency Anaemia. *Vidangadya Loha* contains ingredients like *Shadushna* which diminish *Mandagni* and have *Amapachana* property. Hence, it promotes *Dhatvagni* action and *Dhatupushti* can be motivated

whereas Dhatri is having Tridoshaghna, especially Pitta Shamaka (pacifying Pitta) property, Rasayana (rejuvenative), Shonitsthapana property and also have the capability to increase the bioavailability of iron ingested.

Probable mode of action Vidangadi Loha: Majority of drugs have Katu Rasa, Laghu, Ruksha, Tikshna, Ushna Guna which have Deepan Pachana, Shodhana property and it clears obstructed Srotasa. These all properties assist in Samprapti Vighatana of Pandu Roga. Daruharidra, Pippali and Maricha are content of Vidangadi Loha, having Deepana, Yakrituttejaka, Pittasarak properties. Yakrita is a Moola of Raktavaha Srotasa in Pandu Alparaktata is found. Yakrituttejaka property initiates Yakrita to make good quantity and quality of Rakta Dhatu⁵. Pippali having Deepana, Rasayan and Panduroganuta properties⁶. Vidanga have Krimighna property which checks intestinal worm infestation. Vidanga is Tikshana, Ushana, Agni Vardhaka, Krimihara. Iron is the best Rasayana⁷. By combine action of all these drugs improves Jatharagni as well as Dhatwagni. After this quality and quantity of Rasa and Rakta Dhatu improves. Due to Srotovishodhana property Srotosanga is decreased and dhatu again nourish all part of body.

Probable mode of action Dhatri loha: the ingredients of dhatriloha are as follows:

Amalaki and loha are the main ingredients in this yoga and hence the name dhatriloha mentioned in Rasendrasara Sangraha. Action of the medicine mainly depends upon its constituents like rasa, guna, veerya, vipaka, prabhava etc.

Rasa: Amalaki is an Amla rasa pradhana and can increase Raktha and hence in rakthalpatha, amlapreeti is seen. it also being a rich source of vitamin C helps in the absorption of iron. Hence it is used in anemia along with iron compound. Shunthi, maricha, pippali and haridra are katu rasa pradhana dravyas which can promote agni by their deepana and pachana properties which can nullify the agnimandhya, aruchi like laksanas of pandu roga. They also provide an acidic media for the better absorption of lohabhasma (Iron).

Guna: Laghu, Ruksha, snigdha guna of dravyas can revert back the conditions like dhatushaithilya, gourava.

Virya: Most of dravyas of yoga have sheetavirya.

Vipaka: Most of dravyas have madhura vipaka viz; Amalaki, shunthi, pippali, lohabhasma, madhura, sheetaguna are balavarnakara, Dhatuvardhaka, Preenana and jeevana.

Prabhava: Pramathya property of marica may help in clearing the srothoavarodha. haridra acts as a krimighna and lohabhasma can directly increase the Rakthadhatu (Hematinic effect). Amalaki can act as Rasayana to prevent Ojokshaya.

Dosagnata: All the ingredients of yoga are Tridosahara and kapha vatashamaka. As we know, one among kaphaja vyadhis is pandu roga. vitiated kapha in Twacha produces shwetaavabhasata and vitiated vata in the body is responsible for producing laksanas of pandu roga like karshya, dhatukshaya, shaithilya etc., to nullify the kapha and vata these dravya are very much important. hence by considering above points dhatriloha might have produced beneficial effect in the sign and symptoms of the disease as well as increasing the haemoglobin concentration.

CONCLUSION

The ingredients of vidangadya loha and dhatri loha are well known to have *panduhar* property. In this compound preparation part used and form of drug is modified, in order to make it cost effective and easily available. For palatability, absorption anupana of drug is used as luke warm water. It is an attempt to standardize the formulation of compound. The phytochemical tests are under normal limits so it can be used for further pharmacological evaluation for its efficacy and safety. Research work with larger sample for a longer period of time should be carried out to prove its efficacy.

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