Research Article

SJIF Impact Factor 4.918

A COMPARATIVE CLINICAL STUDY ON THE MANAGEMENT OF PANDU ROGA WITH SPECIAL REFERENCE TO IRON DEFICIENCY ANAEMIA WITH VIDANGADYA LOHA AND DHATRI LOHA

Dr. Anita Yadav*[1], Dr. Manu R.[2] and Dr. Nikunj Thakkar[3]

[1]PG Scholar Department of Kayachikitsa Parul Institute of Ayurevda Vadodara Gujarat-391760.
[2]Hod and Associate Professor, Department of Kayachikitsa, Parul Institute of Ayurveda, Vadodara, Gujarat at, India.
[3]Assistant Professor, Department of Kayachikitsa, Parul Institute of Ayurveda, Vadodara, Gujarat, India.

*Corresponding Author: Dr. Anita Yadav

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

ABSTRACT

Vidangadya loha and Dhatri loha are two famous ayurvedic preparations that are described in ayurvedic classics for the management in pandu roga .The severe change in life style and food habits is main cause of Pandu Roga, one of the commonest and most prevalent diseases known to mankind. Vitiated Pitta Pradhana Tridosha vitiates Rakta as Rakta is Pittavargiya and disease like Pandu Roga sappears. A randomized open clinical trial was conducted with aims to evaluate the efficacy of Vidangadi Loha/Dhatri loha. Total 30 patients of Pandu Roga of age group between 16 to 60 years divided into two group-Group A (n=15)and Group B 9(n=15)were treated with vidangadya loha and Dhatri Loha respectively. Assessment was done on the basis of relief in clinical sign-symptoms and hematological parameters. Both drugs provided significant effect on signs and symptoms of Pandu Roga mainly on Pallor, dry skin, malaise, anorexia, constipation, reduced exercise capacity, headache, edeama, and tremor. Most of drugs of Vidangadi Loha improve Agni. Dhatri loha showed significant results in anaemia (IDA).

KEYWORDS: Agnimandhya, Agni, Pandu Roga, Vidangadi Loha, Dhatri Loha, Anaemia, Iron Deficiency Anaemia.

INTRODUCTION

Majority of people living below poverty line, unhygienic food habits, nutrition deficiency and illiteracy. Other people has no time for themselves to adjust their life in these mechanical life style which is fast, etic and full of stress. These entire factors create Pandu Roga which is one of the commonest and most prevalent diseases known to mankind and appears to be common in humans irrespective of age, sex and religion. As these factors are seen to be more common in children and women the Pandu Roga is prevalent in them. Many of times it is seen that Rakta gets vitiated by Dosha, mainly by Pitta Dosha as Rakta is Pittavargiya and disease like Pandu Roga appear. Pandu Roga is Pitta Pradhana Vyadhi (Dominancy of Pitta).

Due to Hetu Sevana (Causative factors), Pitta Pradhana Tridosha gets vitiated and circulated in the whole body causing Shithilata (bluntness) in all Dhatu which ultimately reduces Rakta and Meda Dhatu. There is Sneha and Rakta Dhatu is decreased and also Rupa (Appearance), Oja Guna, Varna (Color), Bala (strength) are reduced in Pandu Roga. In modern the nearest correlation of Anemia can be done with Pandu. Anemia is a condition that occurs when the hemoglobin concentration in blood below the low limit of normal range for the age and sex of individuals. According to WHO Global Database on Anemia-"Worldwide prevalence of Anemia 1193-2205", it affects 1.62 billion people who correspond 24.8%of the population. In present study, Vidangadi Loha had been selected for following reasons: Mandagni is the motive cause for Pandu Roga and "Vidangadi Loha" Contains Chavya Chitraka like Shadushna Dravya which diminishes Mandagni and breaks the pathogenesis of Pandu Roga. It also has Amapachana property. Hence it promotes Dhatvagni and as a result Dhatupushti process is motivated.

The word Anaemia is a Greek word which means lack of blood or need for blood.[3] In modern world, Iron deficiency Anaemia is one among the commonest nutritional deficiency disorder which prevails in the society. Globally Anaemia prevails in 30% of the population and out of that 50% of Anaemia is attributable to iron deficiency.[4] It is a disorder

characterised by low haemoglobin levels. This accounts for around 8, 41,000 deaths annually, and Asia and Africa bear 71% of global mortality burden.[5] In developed countries the prevalence is 9% and in countries with low development it is about 43%.[6] The population of India is fast increasing so is the prevalence of anaemia. Its incidence is very common in a developing country like India due to the increased rate of poverty and among the rich due to westernisation of food culture and lack of importance given to the nutritious food. India continues to be one of the countries having very high prevalence of Anaemia with 74.3% of proportion of Indian population being Anemic. The prevalence of Anemia is said to be 40% in children and non-pregnant females, 80% in pregnant women and 20% in adult males.[7] The high incidence of anemia acts as the barrier for the development of the nation as it may affect the working capacity of the population. This high incidence of the disease led to its identification by the W.H.O as a world health problem.

AIMS AND OBJECTIVES
1.) To evaluate the therapeutic efficacy of the drug Vidangadya Loha in the management of Pandu roga.
2.) To evaluate the therapeutic efficacy of the drug Dhatriloha in the management of Pandu Roga.
3.) To compare the therapeutic efficacy of the drug Vidangadya Loha and Dhatri Loha in the management of Pandu Roga.

MATERIAL AND METHODS
Selection of patients: Diagnosed 30 patients will be selected randomly from O.P.D. and I.P.D. of Department Of Kayachikitsa, Parul Ayurved Hospital (Limda, Vadodara) campus and other referrals. Who were fulfilling the criteria of the disease were selected and distributed following therapeutic groups irrespective of their age, sex, religion etc. for the present study. The study has been approved by Institutional Ethics Committee and is registered to CTRI (CTRI/2018/04/018810) and consent form each patient was obtained before starting the course of treatment.

a) Inclusion criteria:
- Patients diagnosed with Pandu (Iron deficiency Anaemia)
- Patients belonging to the age group of 16 – 60 years of either sex irrespective of sex, religion, socio economic status etc.
- Patients willing and able to participate in the study

b) Exclusion criteria:
- Patients with history of other systemic diseases like Diabetes mellitus and Hypertension.
- Patients with history of congenital disorders related with haemopoetic system like Sickle cell Anaemia, Leukaemia, and Haemophilia
- Patients suffering with any infectious diseases like Malaria, Typhoid

- Patients suffering from disorder of the gastrointestinal system associated with gastro intestinal bleeding like colorectal malignancy, gastritis, peptic ulceration and inflammatory bowel disease
- Patients on chronic use of Aspirin and NSAIDs
- Pregnant and lactating women.

c) Criteria for diagnostic
- The diagnosis of Iron Deficiency Anaemia will be made based on the symptom pallor and haemoglobin gm% of the individual.
- Pathological laboratory investigation as.
- Blood:- Haemoglobin estimation, Total RBC count, WBC, MCV, MCH, MCHC, RDW, Platelets .The WHO diagnostic criteria 22 will be adopted. The reference range is mentioned below:
➢ Adult males Hb% - 6.5gm/dl-13gm/dl
➢ Adult females Hb%-6.5gm/dl-12

d) Criteria for Assessment: Assessment of the result was made on the basis of improvement in clinical findings as well as laboratory investigations, which were repeated after the completion of treatment also. Improvement in the clinical signs and symptoms were assessed by adopting the following scoring method.

Grading of the parameters
1) Pallor-
- No pallor-0.
- Conjunctiva slightly pale, nails and other mucous membrane not pale-1.
- Conjunctiva pale, nails and other mucous membrane slightly pale-2.
- Conjunctiva, nails and mucous membrane pale-3

2.) Dry skin
- Dryness absent-0.
- Dryness visible on marked skin scratch -1
- Dryness visible on slight skin scratch -2
- Dryness and roughness present without scratch -3

3) Malaise
- Absent -0
- Not affecting normal activity-1
- Affecting normal activity-2
- Completely affecting normal activity -3

4) Anorexia
- Normal taste in food, feeling to eat food in time -0
- Feeling to take food but not having taste-1
- Not feeling to take food even if hungry -2
- Aversion of food -3
- Not taking food at all with feeling of tastelessness -4

5) Constipation
- Stool passes as per normal schedule -0
- Passes stool with strain, sometime takes purgative -1

- Passes stool after more than 24 hours ,frequently takes purgative -2
- Passes stool after gap of one day, normal purgatives does not work -3

6) Edema
- Absent -0
- Mild edema at local region -1
- Edema seen at dependent part of the body -2
- Edema seen all over the body -3

7) Reduced exercise capacity
- **No tiredness in routine works/exercise-0**
- Tiredness with excessive works/exercise-1
- Tiredness with moderate works /exercise-2
- Tiredness with mild works/exercise-3
- Tiredness with no works /exercise -4

8) Headache
- Absent -0
- Present and not affecting normal activity -1
- Present and affecting normal activity – 2
- Present and no activity -3

9) Tremors
- No presence of tremors-0
- Occasionally present -1
- Mild present one time feeble -2
- Moderately present i.e. visible disturbs holding light weight articles activity-3
- Severely present not able to do routine work like buttoning - 4

Treatment schedule
Group A –Vidangadya loha 2tabs of 500mg B.D after meal for 60days with Luke warm water.

Group B –Dhatri loha 2tabs of 500mg B.D after meal for 60days with Luke warm water.

Assessment of Result
The Paired' test and unpaired "t" were carried out for sign and symptoms, investigation and comparison between two groups.

OBSERVATION AND RESULTS
Maximum patients i.e. 50.00% were belong to 16 - 30 years age group, 76.66% were female, Hindu 100%, 76.666% Married, 40% Housewives, 53.33% higher, 63.33% from middle class. Elaborated dietetic disclosed that maximum number (72.22%) patients were taking vegetarian diet, Lavaca Rasa Sevana (use of salty taste) (77.78%) Katu Rasa Sevana (use of acrid taste) (77.78%), and having Avara Kshudha in 50.00%, Vishmagni in 36.66%, Irregular Bowel Habit in 23.33%.

Group A: Provided highly significant effect in relieving pallor (83.84), dry skin(100%), malaise(86.7%), anorexia(100%), constipation(84.21%), headache(70.60%), edema(88.91%), reduced exercise capacity (100%)and tremor (00%).
Group B: Provided highly significant effect in relieving pallor (75.67%), dry skin(100%), malaise(63.14%), anorexia(72.25%), constipation(100%), headache(73.90%), edema(100%), reduced exercise capacity (100%)and tremor (00%).

Effect on haemoglobin
Group A- the mean score of Hb% which was 8.147before treatment increased to 8.867 after medication when these values were analysed statistically the scores were highly significant with $p<0.001$.
Group B- the mean score of Hb% which was 8.113 before treatment increased to 9.707 after medication when these values were analysed statistically the scores were highly significant with $p<0.001$.

Comparison within groups

Group	No	BT	AT	Paired 't' test					
				DIFF.	%	S.D	S.E.M	T	P
A	15	1.200	0.000	1.200	100%	1.014	0.262	0.000	<0.001
B	15	0.933	0.000	0.933	100%	1.163	0.300		

When the data of two groups wre compared they were found to be statistically insignificant, both after predication (p=0.549) but the percentage of improvement after medication was in 8.83% in group A and 19.63% in group b.
Group A: Hb%(8.83%), WBC(0.17%),RBC (5.35%),MCV(7.76%)MCH (11.24%),MCHC(12.76%)RDW (12.07%),Platelets (9.54%).
Group B: Hb% (19.63%), WBC (35.36%), RBC (0.08%), MCV (5.42%) MCH (11.49%), MCHC (3.25%) RDW (2.59%), Platelets (26.67%).

DISCUSSION
Pandu Roga is more appear in16-30 yrs. younger age group patients who are prone to mental stress, excessive exercises, irregularity in diet and improper Vihara (Atapa Sevana, Ratrijagarana etc.) due to their professional responsibilities. The prevalence of Pandu was found to be more in females. This can be due to insufficient dietary habits, social negligence, unawareness and

menstrual cause. The WHO report also shows that worldwide sex incidence is more in females (41.8% pregnant and 30.2% non-pregnant females).[2] Maximum number of patients was vegetarian and like Lavana Rasa, followed by Katu Rasa. According to classics, excessive use these Rasa causes Pitta Prakopa (vitiation of Pitta).[3] Maximum numbers of patient have Mandagni. The hampered Agni ultimately leads to Agnimandya, which

leads to Dhatvagnimandya. Maximum patients were affected with Chinta (Anxiety), Krodha and "Chintyanam Cha Atichintanat" is a cause of Rasavaha Srotasdushti4.

Probeble 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, Pittasaraka 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 Dhatu.[5] Pippali having Deepana, Rasayan and Panduroganuta properties.[6] 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

Probeble 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, snigdhaguna 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, and 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.

Dosaghnata: all the ingridents of yoga are Tridoshahara 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 dhartiloha might have produced beneficial effect in the sign and symptoms of the disease as well as increasing the haemoglobin concentration.

CONCLUSION
Both the drugs are effective to relieve sign and symptoms of pandu roga (IDA) and provided significant effect in increased haemoglobin percentage in between the groups the herbo-mineral drugs vidangadya loha and dhatri loha has proved to be quite effective in the treatment of pandu roga without involving undesireable side effects. So that alternative hypothesis has been accepted.

REFERENCES
1. Dr. Indradeva Tripathi, Chakradatta, Panduroga Chikitsa-8/33-34, Chaukhamba Sanskrit Bhawan, Varanasi, 2014; 82.
2. Available form: http://www.anaemia.org/patients/feature‐articles/content. Php?contentid=000242 and sectionid=00015 [Last cited on 2013 Feb 14].
3. Available form: http://www.whfoods.com/genpage.php?tname=george& dbid=217. [Last cited on 2013 Feb 14].
4. Dr. Indradeva Tripathi, Chakradatta, Srotoviman Sthana 5/13, Chaukhamba Sanskrit Bhawan, Varanasi, 2014; 713.
5. Prof Krushna Chanda Chunekara, BhvaprakashaNighantu, Haritakyadi Varga-197Chaukhmabha Baharati Academy Varanasi-2010.
6. Prof KrushnaChandaChunekara, BhvaprakashaNighantu, Haritakyadi Varga-54,58 Chaukhmabha Baharati Academy Varanasi- 2010.
7. Prof. Dattatrrya Anant Kulkurni, Rasarnasamuccaya, Adhyaya 5/149, Meharchand Lachhmandas Publications, New Delhi, 2010; 121.
8. Anaemia word origin,http://www.collinsdictionary.com
9. Antony S. Fauci, Joseph B. Martin et al. Harrisons Principles of Internal Medicine. USA: Mc. Graw Hill Companies; 17th ed., 2008; (1)630: 1364.
10. Aztony S. Fauci, Joseph B. Martin et al. Harrisons Principles of Internal Medicine. USA: Mc. Graw Hill Companies; 17th ed., 2008; (1)30: 1364.
11. K V Krishnadas. Textbook of Medicine. Delhi: Jaypee brothers Medical publishers private limited; 5th ed., 2008; 990: 1146.
12. Anuradha Gupta et al. Guidelines for control of Iron Deficiency Anaemia. A national Iron Plus Initiative. Delhi; NRHM, 2013; 5-6: 54.