

CLINICAL EFFICACY OF NISHA LAUHA VATI AFTER VIRECHANA KARMA IN
PANDU ROGA W.S.R TO IRON DEFICIENCY ANEMIADr. Vishal Saxena*¹, Dr. Sanjay Kumar Tripathi², Dr. Neetu Lata Bhatt³¹PG Scholar, Dept. of Kaya Chikitsa, Rishikul Govt. Ayurvedic College and Hospital, UAU, Haridwar.²Professor Dept. of Kaya Chikitsa, Rishikul Govt. Ayurvedic College and Hospital, UAU, Haridwar.³Asst. Professor, Dept. of Shalaky Tantra Smt. Manjira Devi Ayurvedic College Uttarkashi.

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ABSTRACT

Anemia is a global public health problem affecting both developing and developed countries with major consequences for human health as well as social and economic development. It occurs at all stages of the life cycle, but is more prevalent in pregnant women and young children. According to WHO Global Database on Anemia-“Worldwide Prevalence of Anemia 1993-2005, it affects 1.62 billion people which correspond to 24.8% of the population. Globally, iron deficiency ranks number 9 among 26 risk factors included in the GBD 2000, and accounts for 841,000 deaths and 35,057,000 disability-adjusted life years lost. **Study design:** The study was “Single blind study” conducted on 60 patients of *Pandu*. All selected patients were randomly assigned to three treatment groups, Group A (*Nisha Lauha Vati*), Group B (*Nisha Lauha Vati* after *Virechana Karma*) & Group C (Iron tablet). Total duration of study was 60 days along with a follow up period of 15 days. Assessment was done on the basis of subjective and objective parameters. **Results:** All the interventions were found to be significantly effective, but Group B showed maximum improvement. The overall effect of Group B was better than Group A & Group C. In Group B, excellent improvement was seen in 16.6% of patients and 66.6% patients shows marked improvement. **Discussion:** The ingredients of *Nisha Lauha Vati* iron is present. *Katuki* is a *Pitta Virechaka* having *Shodhan* property. *Triphala* in this drug is *Rasayan* & also have the property of *Shodhan Karma*. *Haridra* and *Daruharidra* present in *Nisha Lauha Vati Tikta Katu* and *Tikta-kashaya Rasa Pradhan* respectively and also *Ushna Virya* having good effect on liver function as well as *Amapachak*. Because of all these drug present in *Nisha Lauha Vati*, we can think that there is increased absorption of iron in the body result in rapid formation of hemoglobin. In “*NISHA LAUHA VATI*” majority of drugs are having *Tridosahara* property, so it becomes helpful in treating *Tridoshaj Vyadhi PANDU*. Majority of drugs are having *Deepana, Pachana* property. So drug increases the *Jatharagni* and *Dhatvagni* up to normal level and the drug diminishes *Mandagni* and breaks the pathogenesis of *PANDU ROGA*. Maximum no of *Dravyas* possess *Laghu, Ruksha Guna* and *Tikta Kashaya Ras* so the drug also posses *Srotoshudhikara* property as a result it is able to clarify the *Srotas*. **Conclusions (1)** *Pandu roga* and Iron Deficiency Anemia both are nearly same entities. (2) *Nisha lauha vati*, when given after *Virechana Karma* is quite effective in managing the patients of *Pandu roga* (Iron Deficiency Anemia). As, *Nishalauh vati* due to its contents did *Agni deepana, AmaPachana* and *Vataanulomanam* thus breaking the pathogenesis of *Pandu Roga*. *Nisha lauha vati* is very effective after *virechana karma* in controlling the aggravated *Pitta pradhan tridoshajavyadhi (Panduroga)*. So, it can be concluded that the *Ayurvedic* management provide better alternative to *Allopathic* drugs in treating *Panduroga* (I DA) without any side-effects as seen Constipation, Nausea etc. (3) Result of group II *NISHA LAUHA VATI AFTER VIRECHANA KARMA* was encouraging in terms of providing relief on subjective and objective parameters of *pandu roga* as compared to group I (*NISHA LAUHA VATI*) & group III (Tab.Iron). Thus it can be concluded that *NISHA LAUHA VATI AFTER VIRECHANA KARMA* is more effective in management of *panduroga* in comparison to *NISHA LAUHA VATI* & Tab.Iron alone.

KEYWORDS: Anemia, *Pandu*, *NishaLauha Vati*, Iron Deficiency Anemia.

INTRODUCTION

Anemia is a chronic disease marked by decreased hemoglobin concentration. Hb is Iron bearing Protein in Red Blood Cells, which delivers oxygen to tissues

throughout the Body. Iron is a mineral that is essential for proper growth & for performing various vital function of the body. Anemia is a global public health problem affecting both developing and developed

countries with major consequences for human health as well as social and economic development. It occurs at all stages of the life cycle, but is more prevalent in pregnant women and young children.

According to *Ayurveda*, body comprises of 7 *Dhatus* which are responsible for the sustenance of the being. Amongst them the first *Dhatu Rasa* has given more importance as mentioned:

रसजं पुरुषं विद्यात्.....†

Any imbalance in this *Dhatu* will lead to imbalance in further *Dhatus*. Its own functioning depends on the *Agni* which if vitiated will lead to its vitiation too. *Rakta* has been considered as a key factor for the *Jeevana*, *Dharana* and *Poshana Karma* of the body. Blood is the very essence of life and nature has devised a very ingenious method to continuously supply blood to every part of the body, in fact every cell of the body. Oxygen along with other nutrients is supplied continuously by the circulating blood, with the heart at the centre of this system. Oxygen is required for all metabolic functions of the cells and production of energy for these activities. In *Charaka Samhita*, after the description of the concept of *Agni*, *Ajirna*, *Aama* etc. in *Grahani* chapter, the disease *Pandu* has been described which is a *Rasapradoshaja Vikara*. The symptoms of *Pandu*.

“तत्र पाण्डुवामयी स्निग्धस्तीक्ष्णैरुर्ध्वानुलोमिकैः।

संशोध्यो.....

Pandu is described as *Pitta* dominant disorder in classics. Considering the *Dushya Vishesh* i.e. involvement of *Rasavaha Srotas*, preponderance of *Kapha* dominant symptoms. In *Pandu* (IDA) *Vaman & Virechana* can be considered as a treatment but chances of majority of complication of *Vaman Karma* as compare to *Virechana Karma*. So thus going hand in hand with the classical treatment protocol *Virechana Karma* was selected for the present study which is the best treatment protocol for *Pittaj* disorders and also improve the absorption of Iron level in our *Sharira* due to *Sodhana Karma*. For the palliative treatment *Nisha Lauha Vati* was selected. The main content is *Triphala*, *Katuki & Lauha Bhasma* in which *Triphala* has a property of *Tridosahara*, *Anulomana* and has anti-oxidative effect. *Katuki* has property of *Pitta Virechaka* and *Lauha Bhasma* has property of increase concentration of Hemoglobin in blood.

The aim and objectives of the study are to evaluate the effect of *Nisha Lauha Vati* in the management of *Pandu Roga*, to evaluate the effect of *Virechana Karma* in the management of *Pandu Roga* and to provide the reliable, effective & low cost *Ayurvedic* treatment for *Pandu Roga*.

AIMS AND OBJECTIVES

- To evaluate the effect of *Nisha Lauha Vati* in the management of *Pandu Roga*

- To evaluate the effect of *Virechana Karma* in the management of *Pandu Roga*.
- To provide the reliable, effective & low cost *Ayurvedic* treatment for *Pandu*.

MATERIAL AND METHODS

60 Patients of *Pandu roga* were selected from the O.P.D. / I.P.D. department of *Kayachikitsa*, as well as *Panchkarma* department, *Rishikul Campus*, *Haridwar*.

Selection of Sample: - Randomized Sampling

Type of study: Single Blind

Duration of study: 60 days

Selection of drug

The two drug formulations were selected for the present study:

a. *Nisha Lauha Vati*

b. *Nisha Lauha Vati* after *Virechana Karma*

Drug trial schedule: The selected patients for trial were randomly divided into following 3 groups.

Group 1- patients (N-20) will be treated with *Nisha Lauha Vati*- 2 tablets B.D with luke warm water after meal.

Group 2- patients (N- 20) will be treated with *Nisha Lauha Vati* after *Virechana Karma*.

Group 3- patient (N-20) will be treated with ferrous sulfate (tab. Iron) 100 mg BD.

Inclusion criteria

Diagnosed patients without any complication will be included.

Patients having Hb% as follows-

- For female- 6-10 gm%
- For male- 6-12 gm%

Patient between the age group of 15 to 60 years will be taken.

Primary- the patients will be selected on the basis of the presence of classical symptomatology along with some laboratory parameters of *Pandu Roga*.

Exclusion criteria

- ✓ Patients suffering from AIDS, cancer, tuberculosis, Diabetes Mellitus and other severe disease
- ✓ Age below 15 years and more than 60 years.
- ✓ Hb<6gm%
- ✓ Anemia due to causes other than iron deficiency.
- ✓ Pregnancy
- ✓ IBS

Criteria for withdrawal

1. Personal matter
2. Aggravation of complaints
3. Intercurrent illness
4. Any other difficulties
5. LAMA (patient leave against medical advice)

Investigations

The following investigations were conducted to exclude other pathologies as well as to assess the condition of the patient.

- Hematological
- Hb%,
- TLC,
- DLC,
- ESR
- PCV Blood indices: MCV, MCH, MCHC
- Stool test (If Required)
- GBP
- Serum iron level
- Serum ferritin level (if require)

These investigations were done in all the patients before and after completion of treatment to rule out any other pathological condition.

Pathya apathya

All the patients in the trial were advised to reduce salt intake in their diet, avoid fatty and fried foods and include more vegetables and fruits in their diet, to stop addictions like smoking, alcohol if any and to do meditation for 30 minutes daily. The patients were given Diet Chart and also advised to follow DASH Diet i.e. Dietary Approach to Stop HTN.

If patient was taking any drug therapy then he/she was advised to slowly taper off the dose and finally stop the drug 1 week before starting the trial.

Assessment of result

Effects of the therapies were compared before and after the treatment on the basis of self-formulated scoring scales based on subjective and objective parameters associated with the disease.

Table 1: Parameters of assessment.

Subjective parameters	Objective parameters
1. <i>Shiroruja</i> (Headache)	1. Systolic Blood Pressure
2. <i>Hridrava</i> (Palpitation)	2. Diastolic Blood pressure
3. <i>Klama</i> (Fatigue)	3. Pulse rate
4. <i>Bhrama</i> (Vertigo)	4. Pulse Pressure
5. <i>Akshiraga</i> (Redness of eyes)	5. Mean Arterial Pressure
6. <i>Krodhprachuryta</i> (Irritability/anger)	
7. <i>Alpanidra /Anidra</i> (Reduced sleep)	

Statistical analysis

Wilcoxon Signed Rank Test was applied on the subjective parameter in both the Groups. **Paired t- test** was applied on Objective parameters. For inter Group

comparison of subjective parameters **Mann-Whitney U test** was used. For inter Group comparison of objective & biochemical parameter, **Unpaired t- test** was used.

OBSERVATIONS

Table 2: efficacy study of group a on subjective parameters.

Subjective parameter	Median		Wilcoxon Signed Rank W	P- Value	% Effect	Result
	BT	AT				
1. <i>Shiroruja</i> (Headache)	3	1	231	<0.001	76.78%	HS
2. <i>Hridadrava</i> (Palpitation)	2	1	91	<0.001	60.71%	HS
3. <i>Klama</i> (Fatigue)	2	1	45	<0.01	42.8%	Sig.
4. <i>Bhrama</i> (Giddiness)	2	0.5	105	<0.001	74.07%	HS
5. <i>Akshiraga</i> (Redness of eyes)	1.5	0	10	>0.05	66.66%	NS
6. <i>Krodha Prachuryta</i> (Irritability)	2	1	92	<0.001	60.71%	HS
7. <i>Alpanidra / Anidra</i> (Reduced sleep)	2	0	105	<0.001	81.25%	HS

Table 3: Efficacy study of group a on objective parameters.

Objective parameters		Mean	N	SD	SE	t- value	p- value	Result
1. SBP	BT	159.07	28	14.57	2.75	10.1	<0.001	HS
	AT	125.71	28	11.68	2.20			
2. DBP	BT	105.71	28	12.301	2.325	9.625	<0.001	HS
	AT	80.714	28	8.133	1.537			
3. Pulse Rate	BT	78.893	28	4.565	0.8627	2.029	>0.05	NS
	AT	76.143	28	5.784	1.093			
4. Pulse pressure	BT	53.357	28	10.612	2.005	3.070	<0.01	Significant
	AT	45	28	8.819	1.667			
5. Mean Arterial Pressure	BT	122.91	28	11.572	2.187	9.518	<0.001	HS
	AT	95.307	28	9.945	1.879			

Efficacy study of group a on biochemical values

In biochemical parameters, statistically NonSignificant result was found in Hb%, TLC, Polymorphs, Lymphocyte, Eosinophills, Monocytes, Basophills, ESR and BSF. Among LFT & KFT, statistically Non

significant result was found in SGOT, SGPT, B. Urea, S. Creatinine and Uric acid with $p>0.05$. Among Lipid Profile, statistically significant result was found in Total Cholesterol, while Non-significant result was found in TGL, HDL, LDL and VLDL.

Table 4: Efficacy study of group b on subjective parameters.

Subjective parameter	Median		Wilcoxon Signed Rank W	p-Value	% Effect	Result
	BT	AT				
1. Shiroruja (Headache)	3	1	190	<0.001	50.87	HS
2. Hridadrava (Palpitation)	3	2	120	<0.01	40	Significant
3. Klama (Fatigue)	2	1.5	36	<0.01	21.42	Significant
4. Bhrama (Giddiness)	2	1	171	<0.001	58.53	HS
5. Akshiraga (Redness of eyes)	2	1	6	>0.05	66.66	NS
6. Krodha Prachuryta (Irritability)	2	2	28	<0.01	31.03	Significant
7. Alpanidra / Anidra (Reduced sleep)	2	1	91	<0.01	52.94	Significant

Table 5: Efficacy study of group b on objective parameters.

Objective parameters		Mean	N	SD	SE	t- value	p- value	Result
SBP	BT	157.19	27	15.445	2.972	12.956	<0.001	HS
	AT	120.74	27	10.35	1.992			
DBP	BT	107.63	27	13.508	2.6	10.4	<0.001	HS
	AT	79.259	27	9.168	1.764			
Pulse Rate	BT	78.815	27	6.822	1.313	0.5875	>0.05	NS
	AT	79.48	27	4.353	0.837			
Pulse pressure	BT	49.185	27	13.915	2.678	2.514	<0.01	Significant
	AT	41.481	27	6.015	1.158			
Mean Arterial Pressure	BT	123.86	27	12.478	2.401	13.194	<0.001	HS
	AT	93.048	27	9.147	1.760			

Efficacy study of group b on biochemical parameters

Same result was obtained as of Group A which is described earlier.

Table 6: Intergroup comparison of subjective parameter.

Subjective parameters	Group	N	Mean	Sum of Ranks	Mann Whitney U	P value	Result
Shiroruja (Headache)	Group A	21	2.048	558.50	114	<0.01	Significant
	Group B	21	1.381	345			
Hridadrava (Palpitation)	Group A	15	1.2	263.5	111.5	>0.05	NS
	Group B	17	1.059	264.5			
Klama (Fatigue)	Group A	11	1.182	113.50	40.50	>0.05	NS
	Group B	8	1.125	76.50			
Bhrama (Giddiness)	Group A	14	1.5	246	111	>0.05	NS
	Group B	18	1.33	282			
Akshiraga (redness of eyes)	Group A	4	1.250	15.50	5.50	>0.05	NS
	Group B	3	1.333	12.50			
Krodha Prachuryta (Irritability)	Group A	15	0.9333	225.5	74.5	>0.05	NS
	Group B	12	0.75	152.50			
Alpanidra / Anidra (Reduced sleep)	Group A	14	1.857	249	52	<0.05	Significant
	Group B	14	1.286	157			

Table 7: Intergroup comparison of objective parameter.

Parameters	Group	N	Mean	SD	SE	t value	p value	Result
Systolic blood pressure	Group A	28	33.35	17.47	3.302	0.7095	>0.05	NS
	Group B	27	36.444	14.616	2.813			

Diastolic blood pressure	Group A	28	25	13.744	13.744	0.8953	>0.05	NS
	Group B	27	28.37	14.175	14.175			
Pulse rate	Group A	28	2.75	7.173	1.356	1.926	>0.05	NS
	Group B	27	-0.667	5.897	1.135			
Pulse pressure	Group A	28	8.357	14.402	2.722	0.1597	>0.05	NS
	Group B	27	7.704	15.920	3.064			
Mean arterial pressure	Group A	28	27.604	15.346	2.9	0.8578	>0.05	NS
	Group B	27	30.811	12.134	2.335			

Table 8: Comparative assesment of % relief in subjective parameters.

Symptoms	% Relief in Group A	% Relief in Group B
<i>Shiroruja</i> (Headache)	76.78	50.87
<i>Hridadrava</i> (Palpitation)	60.71	40
<i>Klama</i> (Fatigue)	42.8	21.42
<i>Bhrama</i> (Giddiness)	74.07	58.53
<i>Akshiraga</i> (redness of eyes)	66.66	66.66
<i>Krodha Prachuryta</i> (Irritability)	60.71	31.03
<i>Alpanidra / Anidra</i> (Reduced sleep)	81.25	52.94

Table 9: Comparative assesment of % relief in objective parameters.

Parameters	% Relief in Group A	% Relief in Group B
Systolic blood pressure	20.97	23.186
Diastolic blood pressure	23.65	26.35
Pulse rate	3.48	0.8
Pulse pressure	15.66	15.66
Mean arterial pressure	22.45	24.87

Table 10: Estimation of overall response in each group.

Improvement (%)	Group A		Group B	
	No	%	No	%
Excellent (75-100%)	8	28.57%	2	7.4%
Marked Improvement (50-74%)	16	57.14%	10	37%
Mild Improvement (25-49%)	1	3.57%	13	48.14%
No Improvement (<24%)	3	10.7%	2	7.4%

RESULT

While observing subjective and objective assessment following results are found:

In Group A (Ayurvedic formulation JAGMST)

In subjective assessment, the result was statistically highly significant in *Shiroruja*, *Hridadrava*, *Bhrama*, *Krodhaprachuryta* and *Alpnidra/Anidra* with p value <0.001 in each. Statistically significant result was found in *Klama* with p value <0.01 and NonSignificant result was found in *Akshiraga* with p value <0.05.

In GROUP B (Amlodipine)

In subjective assessment, the result was statistically highly significant in *Shiroruja* and *Bhrama* with p value <0.001. Statistically significant result was found in *Hridadrava*, *Klama*, *Krodha Prachuryta* and *Alpnidra/Anidra* with p value <0.01 and <0.05. NonSignificant result was found in *Akshiraga* with p value >0.05.

In objective assessment, both groups shows statistically highly significant result was found in SBP, DBP and Mean Arterial Pressure. Statistically significant result

was obtained in Pulse pressure. Nonsignificant result was obtained in Pulse Rate.

On biochemical parameters, both groups shows insignificant changes in Hb%, TLC, DLC, ESR, BSF, SGOT, SGPT, B. UREA, S. CREATININE, Uric Acid and Lipid Profile with p value >0.05 was observed.

Inter group comparisson

On symptom of *Hridadrava*, *Klama*, *Bhrama*, *Akshiraga* and *Krodha Prachuryta* insignificant result (p>0.05) was obtained while *Shiroruja* and *Alpanidra* shows significant result on comparing Group A and Group B. On SBP, DBP, Pulse Rate, Pulse Pressure and Mean Arterial pressure, statistically insignificant result (p>0.05) was obtained on comparison of Group A and Group B. This shows that both the groups have similar effect in controlling Blood Pressure.

Overall effect of therapy

Overall response in Group A (Ayurvedic formulation) was **Excellent** improvement in **28.57%** patients, **Marked** improvement in **57.14%** patients and **Mild** improvement in **3.57%** patients whereas 10.7% patients showed no improvement. While Group B (Amlodipine)

showed **Excellent** improvement in **7.4%** patients, **Marked** improvement in **44.44%** patients and **Mild** improvement in **40.7%** whereas 3.7% patients showed no improvement.

DISCUSSION

Probable mode of action of *ayurvedic* formulation

Maximum drugs of combination are having *Tikta Kashaya Pradhana Rasa; Laghu, Snighda Guna; Sheeta Virya; Katu Vipaka*. The overall effect of the combination is *Tridosha Hara*. The effect of *Jatamansi* is *Medhya, Nidrajanana* and *Hridaya Niyamaka*. *Arjuna* is *Hridaya, Rakta Prasadaka, Shothahara* and *Medohara*. *Gokshura* is *Mutrala, Vata Anulomka* and *Shothahara*. *Mandukaparni* is *Medhya, Hridaya* and *Ama Pachaka*. *Sarpagandha* is *Raktadaba Shamaka, Nidrajanana* and *Ama Pachaka* and *Tagara* is *Nidrajanana, Medhya, Hridaya, Mutrala* and *Deepana Pachana*. The various properties of combination like *Medhya, Hridaya, Vata Anulomaka, Ama Pachaka* and *Nidrajanana* etc. helps in controlling the factors responsible for the Blood Pressure to rise. Therefore the combination helps in the management of Essential Hypertension by breaking the *Samprapti*.

Probable mode of action of amlodipine

It is an angio-selective Calcium Channel Blocker and inhibits the movement of calcium ions into vascular smooth muscle cells and cardiac muscle cells which inhibits their contraction. This causes vaso-dilation and a reduction in peripheral vascular resistance, thus lowering blood pressure. Its effects on cardiac muscle also prevent excessive constriction in the coronary arteries.^[1] Amlodipine reduces the total peripheral resistance (after load) against which the heart works and reduces the rate of pressure production, thereby lowering myocardial oxygen demand, at any given level of exercise.^[2]

CONCLUSION

Essential hypertension can be correlated as *Vata Pradhana Tridoshaja Vyadhi*. Stress is most powerful factor for causing Essential Hypertension. High intake of salt and tea, sedentary lifestyle, Lack of exercise precipitate the disease. Overall effect of *Ayurvedic* formulation can be summarized as *Tridosha Shamaka* (mainly *Vata*), *Manasa Doshahara, Hridya, Medhya* and *Mutrala*. Due to wider range of action, the *Ayurvedic* formulation thus prepared has shown better results in relieving the symptoms of Hypertension. In lowering the Blood Pressure, satisfactory result was obtained from the preparation. More over no side effects were observed in patients during and after the treatment so, it can be concluded that the patients of Hypertension can be managed effectively by *Ayurveda* without fear of side effects.

Conflict of interest: None.

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