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CLINICAL EVALUATION OF *DARVYADI LAUHA* AND *VASADI KASHAYA* IN THE MANAGEMENT OF *PANDU ROGA* W.S.R. TO IRON *DEFICIENCY ANAEMIA*

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ABSTRACT

Anaemia is most prevalent nutritional deficiency disease in both the developed and developing countries with its prevalence rate higher in children and women of child bearing age. The commonest type of Anaemia is Iron Deficiency Anaemia**.** 9 out of 10 people living in developing countries are the sufferers of Iron deficiency Anaemia. This compelled the *W.H.O. to declare it as a world health problem***.** *Pandu Roga* is mainly concerned with the vitiation of *Pitta Dosha* which in turn vitiates *Rakta* and other *Dhatus*. The oral iron preparations used in modern science are gastric irritants and have side-effects like nausea, constipation, diarrhoea etc. which further deteriorates the health of the patient. *Ayurveda***,** has lots to offer for the treatment of *Pandu Roga* with its *Lauha* preparations and herbal treasures. Out of many preparations mentioned in classical texts, *Darvyadi Lauha* and *Vasadi Kashaya* were selected for the trial work. The purpose of the clinical trial is primarily to establish the efficacy of the treatment selected for the research work. They were randomly divided into three groups. The patients were assessed on different parameters for obtaining the effect of the drugs. All clinical signs and symptoms were assessed on the basis of scoring given to them. Before the medication, thorough laboratory investigations were done. Duration of clinical trial was of three months and all the patients were regularly followed up after one month to evaluate the therapeutic effect of the trial drugs.

Key Words: Iron Deficiency Anaemia**,** *Pandu Roga, Darvyadi Lauha* ,*Vasadi Kashaya* .

INTRODUCTION

Ayurveda is the science of life which focuses on maintenance of positive health in healthy and eradication of ailments in diseased through its holistic approach, lifestyle practices, dietary habits and safer medications. Malnutrition either due to inadequate dietary intake or lack of balanced diet and population explosion in today's world has lead to the development of various diseases and *Pandu Roga* is one such disease. *Pandu* is a *Varnopalakshita Vyadhi* wherein paleness is pathognomonic. A disease characterized by *Pandu Varna* is known as *Pandu Roga*. *Pandu Roga* is mainly concerned with

the vitiation of *Pitta Dosha* which in turn vitiates *Rakta* and other *Dhatus*. *Pitta* is responsible for normal colour of the body, so, if it gets vitiated, impairment of colour and complexion *(Panduta)* occurs. *Pandu Roga* as mentioned in *Ayurvedic* texts has very close resemblance with the description of anaemia available in modern texts in terms of *Nidana, Samprapti, Lakshanas* and *Chikitsa*. Anaemia is defined as a state in which blood haemoglobin level is below the normal range for patient's age and sex. The commonest type of anaemia is Iron Deficiency Anaemia which is most prevalent nutritional deficiency disease. Globally, 30% of the total world population are Anaemic and half of these have Iron Deficiency Anaemia. According to *WHO*, 50% of children and women and 25% of men in developing countries like India are suffering from Iron Deficiency Anaemia..

Aims and Objectives of the study:

Conceptual study of *Pandu Roga* vis-à-vis Iron-Deficiency Anaemia. And to clinically evaluate therapeutic effects of *Darvyadi Lauha* and *Vasadi Kashaya* in the management of *Pandu Roga* w. s .r. to Iron-Deficiency Anaemia.

MATERIALS AND METHOD

Patient were selected from JIAR and Govt hospital Sarwal, Jammu.

Inclusion Criteria :

- Patients having Haemoglobin concentration below 10gm%
- Patients having classical signs and symptoms of *Pandu Roga* as mentioned in *Ayurvedic* texts.
- Age group – 20-60 yrs

Exclusion criteria

- Age below 15 years and more than 50 years.
- Pregnancy and Lactation.
- Patients suffering from following disorders:
- Pernicious Anaemia, Megaloblastic Anaemia, Aplastic Anaemia, Haemolytic Anaemia, Leukaemia, Anaemia due to menstrual disorders.

Criteria of Assessment

Clinical Assessment:

- Improvement in the signs and symptoms of *Pandu Roga* as per *Ayurvedic* classics like *Panduta,Daurbalya,Aruchi,Bhrama,Shwasa ,Hridaspandana*.
- Improvement in the general health of the patients and increased feeling of well-being.

Laboratory Investigations: Hb (g %),TLC,DLC,ESR,PCV,MCV,MCH,MCHC, were carried out in all patients before and after treatment.

MATERIALS: Materials (Drugs) used in the research work are:

- ***Darvyadi Lauha***[1]: ***Darvi, Amalaki, Haritaki, Bibhitaka, Pippali, Shunthi, Maricha, Vidanga, Lauha Bhasma***
- ***Vasadi Kashaya***[2]***: Vasa, Amrita, Nimba, Kiratikta, Kutaki***

Table no. 1

GROUPING: The patients were selected randomly and divided into three groups.

S.No.	GROUP	DRUG	DOSE	ANUPANA
1	A	*Darvyadi Lauha*	250 mg BD (Orally)	water

2	**B**	*Vasadi Kashaya*	40 ml BD (Orally)	water
3	**C**	*Darvyadi Lauha* and *Vasadi Kashaya*	250 mg BD and 40 ml BD (Orally)	water

OBSERVATIONS AND RESULTS

Table No.2: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *PANDUTA*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	2.4	1.33	1.06	44.16	10	0.52	0.16	6.53	< 0.001	H.S
B	2.3	1.76	0.54	23.47	10	0.32	0.1	5.23	0.001	S
C	2.4	1.2	1.2	50	10	0.48	0.15	7.96	< 0.001	H.S

Table No. 3: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *BHRAMA*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	2.12	1.54	0.58	27.35	8	0.43	0.15	3.86	0.006	S
B	1.5	1.28	0.24	16	6	0.27	0.11	2.08	0.1	N.S
C	1.57	0.95	0.62	39.49	7	0.52	0.19	3.12	0.02	S

Table No.4: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *ARUCHI*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	1.7	1.3	0.4	23.52	10	0.41	0.12	3.08	0.01	S
B	2.25	0.7	1.54	68.44	8	0.64	0.23	6.8	< 0.001	H.S
C	2.2	0.9	1.1	55	10	0.39	0.12	9	< 0.001	H.S

Table No.5: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *DAUR-BALYA.*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	2.28	1.67	0.61	26.75	7	0.36	0.13	4.59	0.004	S
B	1.7	1.34	0.37	21.76	10	0.33	0.1	3.49	0.007	S
C	2.2	1.26	0.93	56.02	10	0.54	0.17	5.47	< 0.001	H.S

Table No.6: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *SHWASA.*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	1.8	1.2	0.6	33.33	5	0.49	0.49	2.71	0.05	S
B	1.5	1.05	0.45	30	4	0.52	0.26	1.7	0.18	N.S
C	1.66	0.89	0.78	46.98	6	0.54	0.22	3.5	0.01	S

Table No. 7: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN *HRIDAS-PANDANA.*

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	1.4	1	0.4	28.57	5	0.43	0.43	2.05	0.1	N.S
B	1.34	0.89	0.45	33.58	3	0.5	0.29	1.51	0.27	N.S.
C	1.33	0.78	0.56	41.79	6	0.54	0.22	2.5	0.05	S

Table No. 8: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN HAEMOG-LOBIN CONCENTRATION.

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	7.45	9.12	-1.67	22.42	10	0.39	0.125	-13.29	< 0.001	S
B	7.85	8.58	-0.73	9.29	10	0.35	0.11	-6.6	< 0.001	S
C	6.75	9.64	-2.89	42.81	10	0.63	0.2	-14.43	< 0.001	S

Table No. 9: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN RED BLOOD CELL COUNT

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	3.5	4.54	-1.04	29.71	10	0.38	0.12	-8.57	< 0.001	S
B	4.33	3.82	0.51	11.77	10	0.32	0.1	4.91	0.001	S
C	3.14	4.56	-1.42	45.22	10	0.41	0.13	-11.01	< 0.001	S

Table No. 10: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN PACKED CELL VOLUME.

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	28.9	36	-7.1	24.56	10	2.233	0.71	-10.05	< 0.001	S
B	30.6	35.7	-5.1	16.66	10	3.03	0.95	-5.31	< 0.001	S
C	26.1	37.9	-11.8	45.21	10	3.64	1.15	-10.23	< 0.001	S

Table No. 11: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN MEAN CORPUSCULAR VOLUME.

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	66.7	74.5	-7.8	11.69	10	3.29	1.04	-7.49	<0.001	S
B	67.1	74	-6.9	10.28	10	3.24	1.02	-6.72	< 0.001	S
C	63.5	77.6	-14.1	22.2	10	3.84	1.21	-11.6	< 0.001	S

Table No. 12: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN MEAN CORPUSCULAR HAEMOGLOBIN.

Group	Mean	Mean	Mean	N	S.D.	S.E.	t value	p value	Sig.

	B.T.	A.T.	Diff.	%						
A	24	27.6	-3.6	15	10	1.71	0.54	-6.65	<0.001	S
B	24	27.6	-3.6	15	10	1.89	0.6	-6	< 0.001	S
C	22.6	27.8	-5.2	23	10	1.68	0.54	-9.75	< 0.001	S

Table No. 13: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN MEAN CORPUSCULAR HAEMOGLOBIN CONCENTRATION.

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	29.7	29.4	0.3	1.01	10	2.002	0.633	0.474	0.65	N.S
B	28.7	29	-0.3	1.04	10	2.21	0.7	-0.43	0.68	N.S
C	27.4	30.4	-3	10.94	10	1.41	0.44	-6.71	< 0.001	S

Table No. 15: COMPARATIVE ANALYSIS BETWEEN THREE GROUPS IN RETICULOCYTE COUNT.

Group	Mean		Mean Diff.	Mean %	N	S.D.	S.E.	t value	p value	Sig.
	B.T.	A.T.								
A	1.3	1.7	0.4	21.76	10	0.41	0.12	3.49	0.01	S
B	1.3	1.7	0.4	21.76	10	0.41	0.12	3.49	0.01	S
C	1.7	2.3	0.5	23.47	10	0.32	0.1	5.23	0.001	S

PROBABLE MODE OF ACTION OF DRUGS

***DARVYADI LAUHA*:** Most of the ingredients of *Darvyadi Lauha* possess qualities like *Tridoshahara, Deepana, Pachana, Hridya, Yakriduttejaka, Krimighna, Shwasahara, Raktavardhaka* and *Rasayana. Darvyadi Lauha* contains *Amalaki* which helps in absorption of iron and increases the bioavailability of *Lauha Bhasma. Daruharidra* is *Pittahara* and *Arochakaghna. Triphala* has properties like *Tridoshashamaka, Dhatuvardhaka* and *Rasayana* which may improve *Dhatu-shaithilya, Daurbalya* and *Ojogunakshaya. Pippali* in itself is *Raktavardhaka* and *Maricha* is *Srotoshodhaka*, so it may check *Rasavaha Srotodushti* and help in the proper formation of *Rakta Dhatu. Lauha Bhasma* is *Pittashamaka, Balya, Vrishya, Tridoshhara* and *Rasayana.*

***VASADI KASHAYA*:** Ingredients of *Vasadi Kashaya* possesses qualities like *Kaphapittashamaka, Balya, Deepana, Pachana, Krimiaghna, Shwasahara* and *Hridya.* The *Deepana, Pachana Guna* is likely to check *Agnimandya* and alleviate *Ama*.

CONCLUSION

Overall Effect of Therapy: While assessing the overall percentage of improvement in all the three groups on different clinical parameters, it was noticed that there was 30.61% improvement in Group A, 32.20 % in Group B and 45.97 % improvement in Group C .i.e. administration of both *Darvyadi Lauha* and *Vasadi Kashaya* together in the patients of *Pandu Roga* produced a good feeling of general well-being and marked improvement in most of the clinical and haematological parameters.

"Thus, it may be concluded that *Darvyadi lauha* along with *Vasadi Kashaya* is a potent remedy in the management of *Pandu Roga* w.s.r. Iron Deficiency Anaemia".

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