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Research Article

EFFECT OF *DHATRIYARISHTA* IN THE MANAGEMENT OF *PANDUROGA* (IRON DEFICIENCY ANAEMIA)

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ABSTRACT

Iron Deficiency Anaemia (IDA) is the most common type of Anaemia overall, and is caused when the dietary intake or absorption of Iron is insufficient. Iron is essential portion of Hemoglobin and low Iron levels results in decreased incorporation of Hemoglobin into Red Blood Cells and thus Anemia develop. Classically it can be compared with the *Panduroga* by their similar signs and symptoms. Acharya Charaka has described *Panduroga* under Rasa *Kshayajanya Vyadhi*, which may cause malnourishment and deficiency of next *Dhatu Rakta* (Blood). Here 28 patients were selected in the study and randomly divided into two groups. Group A received *Dhariyarista*, Group B received Control drug Ferrous sulphate. At the end of 45 days symptomatic improvement and increase in Hb% in Group A was noticed compared to Group B. No significant therapy is there for chronic Anaemias in Modern science, which are often due to metabolic defect, so an attempt has been made to evaluate the efficacy of *Dhariyaristha* on Iron Deficiency Anemia. Reported that this drug has useful role in preventing Iron deficiency Anemia due to metabolic defect.

KEY WORDS: *Panduroga*, Iron Deficiency Anemia, *Dhatriyarishta*, Ferrous sulphate.

INTRODUCTION

Blood is the 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 center of this system. *Prinanam* (Nourishment and *Jeevanam* (Maintain oxygen supply) are *Pradhan Kairma* of the Blood (*Rasa-Rakta*). In Ayurveda *Panduroga* is *Pitta pradhana vyadhi*, *Pitta* situated in heart is aggravated and propelled by the strong *Vayu* in ten arteries which spread it in the whole body. This *Pitta* located in the space between skin and muscle affects *Kapha*, *Vata*, *Tvak* and *Mamsa* and thereby produces various shades of colours like *Pandu* (Pale), *Haridra* (deep yellow) *Harita* (green) in skin[1]. and characterized by Pallor of the Body. It resembles with Anaemia of Modern science, in this disease reduction of Hemoglobin, number of RBCs per cu.mm of Blood and quantity of Hb% resulting in pallor of the skin[2]. *Panduroga* is a *Rasapradoshaja vikara* according to Acharya Charaka[3], due to *Agnimandya* (reduced metabolism) and other chronic diseases (*Nidanarthkar roga*). Rasa *Dhatvagni Mandya* leads to *Raktakshya* (malnourishment of *Rakta*), which cause *Panduroga* and symptoms like *Panduta*, *Rukshta*, *Hrid dravtva, Shvasa Shotha*[4] etc., were developed.

The population of India is increasing at a rapid rate and most of the people are living under poverty line, who cannot get quantitatively and qualitatively sufficient diet,. So, Anaemia is common throughout the world. Its main cause, Iron deficiency, is the most prevalent nutritional deficiency in the world. Several infections related to hygiene, sanitation, safe water and water management are significant contributors to Anaemia in addition to Iron deficiency. Anaemia affects all population group. In modern medicine, there is good treatment for Anaemia with considerable result but that is only for acute deficiencies Anaemias. Iron is absorbed more easily in its Ferrous form, and Ferrous ions are formed in the Acid

conditions of gastric contents[5]. Hence, the formulation like *Dhariyarishta*[6], which contains mainly *Amalaki* (*Emblica Officinalis* Gaertn.) helps to develop that media which can improves the iron absorption at gastric level and also acts as a carminative[7]. It reduces the Mal-metabolism of food and body tissues (*Rasa-Raktadi dhatu*) get nourished. No significant therapy is there for chronic Anemia, which occurs due to metabolic defects. Reported that this drug has useful role in preventing Iron deficiency Anemia due to metabolic defect.

Aims and Objectives

The aim of study was to clinically assess Iron deficiency Anemia and to evaluate the efficacy of '*Dhatriyarishta'* in its management.

MATERIALS AND METHODS

A total of 28 patients of *Panduroga* (IDA) were randomly selected from outpatients and inpatients Department of *Roganidan* and *Kayachikitsa*, IPGT&RA, Jamnagar in the year 2006. Out of 28 patients, 4 patients are discontinued during the treatment and 24 patients are treated completely.

Criteria for Selection of the Patients

Inclusion Criteria

1. Primarily the Patients were selected on the basis of the presence of classical symptomatology along with some Modern parameters of *Panduroga*.

2. Patients having Hb%

- For Female: Below 12 %
- For Male: Below 13 %

Specific Investigation like Serum Iron level and Total Iron Binding Capacity (TIBC) were also carried out.

Serum iron

- In Male Below 65–177 µg/dL (11.6–31.7 µmol/L);
- In Female 50–170 µg/dL (9.0–30.4 µmol/L)

Total Iron Bounding Capacity: Below 250–370 µg/dL (45-66 µmol/L) were selected. Patients between the age group of 15-50 years were selected for the study.

Exclusion Criteria

1. Patients suffering from AIDS, Cancer, Tuberculosis, Diabetes Mellitus and other disorders.
2. Pregnancy
3. Age below 15 years and more than 50 years.

Investigations

- Hematological
- Hb %
- TC
- DC
- ESR
- Blood Indices: MCV, MCH, MCHC.
- Serum Iron Level
- Total Iron Binding Capacity (TIBC)
- Routine and Microscopic Urine and Biochemical examinations have excluded.

Preparation of *Dhatriyarishta*

Ingredients:

1. *Amalaki Svarasa*
2. *Sharakara* (sugar)
3. *Madhu* (honey)

Prakshepa Dravya

1. *Pippali churna* (powder of *Piper longum* L.)

Method of Preparation of Drug

First *Dhupana karma* was done in porcelain jar, than *Amalaki Svarasa* was added in it, than *Sharkara* and *Madhu*, and in last *Pippali churna* was added as *Prakshepa dravyas*. *Sandhana* was done properly and after 45 days *Arishta* was carried out from the jar, filtered well and packed in brown bottle.

Drug, Dose and Duration

Group A: *Dhatriyarishta*

Dose: 20ml twice a day

Time of administration: Before meal

Duration: 45 days

Anupana: Water

Group B: Control group-Ferrous Sulphate

Dose : 150mg thrice daily

Time of administration: After meal

Duration 45 days

Anupana : water

Changes in patients status were noted and following points were taken into consideration for assessment of results. To assess the effect of therapy objectively, all the signs and symptoms were given scoring pattern depending upon their severity as below:

1. *Panduta* (Paleness)

In - *Tvaka, Nakha, Netravartma, Jihva, Hastapadatala*

Absent - 0

In any 2 of these - 1

In any 3 of these - 2
In any 4 of these - 3
In all - 4

2. *Daurbalyta* (Weakness)

Not Present - 0
After heavy work, relieved soon and tolerate - 1
After moderate work relieved later and tolerate - 2
After little work relieved later - 3
After little work relieved later but beyond tolerate - 4

3. *Hridspandanam* (Palpitation)

Not Present - 0
After heavy work, relieved soon and tolerate - 1
After moderate work relieved later and tolerate - 2
After little work relieved later – 3
After little work relieved later but beyond tolerate - 4
Hridaspandanam even in resting condition - 5

4. *Bharma* (Vertigo)

Not Present - 0
After heavy work, relieved soon and tolerate - 1
After moderate work relieved later and tolerate - 2
After little work relieved later - 3
After little work relieved later but beyond tolerate - 4
Bhrama even in resting condition - 5.

5. *Shunakshikuta Shotha* (Oedema around Eyes)

Absent - 0
Mild - 1
Moderate - 2
Severe - 3

6. *Rukshata* (Dryness)

In - *Tvaka, Nakha, Netravartma, Jihva, Hastapadatala*

Absent - 0
In any 2 of these - 1
In any 3 of these - 2
In any 4 of these - 3
In all - 4

7. *Shvasa* (Dysponea)

Not Present - 0
After heavy work, relieved soon and tolerate - 1
After moderate work relieved later and tolerate - 2
After little work relieved later - 3
After little work relieved later but beyond tolerate - 4
Shvasa even in resting condition - 5

8. *Aruchi* (Loss of Appetite)

Normal instinct of taking food - 0
Person even dislikes the touch or smell of food - 1
Though the person is hungry, dislike for food Due to fear, anger etc - 2
Person doesn't like to take food due to *Sharira/Manas doshas* - 3

9. *Pindikodveshtanam* (Leg Cramps)

Absent - 0
After heavy work - 1
After moderate work - 2
Only at night but beyond tolerate - 3
Whole day, severe, require medicine - 4

10. *Jvara* (Fever)

No - 0
Occasional - 1
Daily once - 2
Constant – 3

Follow up: The follow up study of patients were conducted for one month after completion of the treatment.

Criteria for Assessment:

The improvement in the patient was assessed mainly on the basis of points that given below:

1. Increasing percentage of the Hemoglobin.
2. Improvement in the sign and symptoms of the disease.
3. Improvement in the general health and other Biological parameters.
4. The outdoor patients were examined weekly.

Changes in patient's status were noted.

Statistically Analyzed

The obtained data were analyzed statistically. The values were expressed as Mean ± SEM. The data were analyzed by paired 't' test. The level of $P<0.05$ and ($P<0.01$, $P<0.001$) was considered as statistically significant and highly significant respectively. Level of significance was noted and interpreted accordingly

Criteria for Assessing the Total Effect

Considering the overall improvement shown by the patient in sign and symptoms, the

total effect of the therapy has been assessed as below. It is assessed on the basis of percentage of relief obtained.

Criteria for Assessment of Results

Cured: When the sign and symptoms are improved about 75% and above.

Markedly improved: When the sign and symptoms are improved about 51% to 75%.

Improved: When the sign and symptoms are improved about 25% to 50%.

No improvement: When the sign and symptoms are below 25%.

OBSERVATION AND RESULTS

The Effect of *Dhatriyarishta* on chief complaints is shown in Table. 1. The improvement in Haematological investigations is shown in Table. 2 and improvement in Serum Iron level and in Total Iron Binding Capacity (TIBC) is shown in Table. 3.

Table 1: Effect of *Dhatriyaishta* on Signs and Symptoms of IDA.

Sign and Symptoms	N	Mean		% Relief	S.D.	S.E.	't'	p
		B.T.	A.T.					
Paleness	13	2.15	1	56.73	0.55	0.15	7.5	<0.001
Weakness	13	2.07	0.92	55.55	0.69	0.20	6.04	<0.001
Palpitation	06	1.83	0.83	54.65	0.89	0.36	2.73	<0.05
Vertigo	08	1.75	0.5	71.42	0.46	0.16	7.63	<0.001
Oedema around eyes	05	1.4	0.6	57.14	0.44	0.20	4	<0.01
Dry skin	10	2.4	1.6	33.33	0.63	0.20	4	<0.01
Restlessness	06	1.66	0.83	50	0.75	0.30	2.71	<0.05
Anorexia	09	1.66	0.44	33.33	0.72	0.24	2.29	<0.01
Leg Cramps	12	2.16	1	53.84	0.57	0.16	7	<0.001
Fever	05	2.4	1.2	14.86	0.44	0.2	6	<0.001

Table 2: Effect of *Dhariyarishta* on Haematological Investigations of IDA

Investigations	N	Mean		% Relief	S.D.	S.E.	't'	P
		B.T.	A.T.					
Hb%	13	10.77	11.30	4.8	1.17	0.32	1.7	<0.01
TRBC	13	4.22	4.34	2.77	0.22	0.06	2.21	<0.05
MCV	13	80.55	81.4	1.04	3.60	1	0.76	<0.01
MCH	13	25.33	26.2	3.36	1.87	0.57	1.64	<0.1
MCHC	13	31.73	31.8	0.19	1.44	0.4	0.15	<0.1
ESR	13	22.30	20.46	8.17	10.14	2.81	0.65	<0.1

Table 3: Effect of *Dhatriyashta* on Serum Iron level and TIBC on IDA

Investigations	N	Mean		% Relief	S.D.	S.E.	't'	P
		B.T.	A.T.					
Serum Iron /dl	5	34	35	2.94	2.00	0.89	1.11	<0.1
TIBC	5	378	395.8	4.6	9.3	4.15	4.18	<0.05

The effect of Control Group on chief complaints is shown in Table. 4. The improvement in Haematological investigations is shown in Table. 5 and improvement in Serum Iron level and Total Iron Binding Capacity (TIBC) is shown in Table. 6.

Table 4: Effect of Control Group on Signs and Symptoms of IDA.

Sign and Symptoms	N	Mean		% Relief	S.D.	S.E.	't'	p
		B.T.	A.T.					
Panduta	11	2.27	0.81	64	0.52	0.13	9.6	<0.001
Daurbalyta	11	2.29	1	65.5	0.45	0.13	14.07	<0.001
Hridaspandanama	09	1.90	1	43.30	0.78	0.26	4.26	<0.01
Bhrama	08	1.87	0.36	80.70	0.5	0.17	7.74	<0.001
Shunakshikut shotha	08	1.87	1	46.50	0.9	0.32	3.56	<0.001
Rukshata	09	3.44	2.44	29.10	0.5	0.16	6.25	<0.01
Shvasa	09	2.1	0.44	79.05	0.52	0.18	8	<0.01
Aruchi	08	6.7	1	63.0	0.7	0.24	7.2	<0.001
Pindikodweshnama	11	2.63	0.81	69.20	0.53	0.16	11.3	<0.001
Jvara	07	1.71	0.57	66.7	0.37	0.14	8.4	<0.001

Table 5: Effect of Control Group on Haematological Investigations of IDA

Investigations	N	Mean		% Relief	S.D.	S.E.	't'	P
		B.T.	A.T.					
Hb%	11	9.9	11.36	21.16	2.21	0.66	3.1	<0.01
TRBC	11	4.53	4.75	28.68	3.57	1.07	1.2	<0.1
MCV	11	70.82	78.72	11	6.82	2.05	3.78	<0.01
MCH	11	22.23	24.68	10.08	2.67	0.8	2.77	<0.05
MCHC	11	31.33	31.36	1.24	1.46	0.44	0.88	<0.1
ESR	11	23.81	16	32.82	9.52	2.87	2.72	<0.05

Table 6: Effect of Control Group on Serum Iron level and TIBC on IDA

Investigations	N	Mean		% Relief	S.D.	S.E.	't'	P
		B.T.	A.T.					
Serum Iron	5	31.8	31.4	1.25	7.23	3.23	0.12	<0.1
TIBC	5	424.4	408	3.39	53.9	24.1	0.6	<0.1

DISCUSSION

Anaemia due to iron deficiency can be recognized easily on clinical examination and by laboratory tests in which the iron levels in the blood, bone marrow and various other tests can show if there is a deficiency of iron. This can be corrected through dietary management and iron therapy. But there is no doubt that preventive measures in the form of dietary management and taking measures to correct losses or malabsorbtion are the preferred methods of treatment. Dietary Iron is predominantly in the form of organic complexes, but ferrous and ferric ions and elemental Iron are also present.

Iron is absorbed more easily in its Ferrous form, and Ferrous ions are formed in the Acid conditions of gastric contents. Hence, the formulations like *Dhariyarishta*, which contains mainly *Amalaki* helps to develop that media which can improves the iron absorption at gastric level and also acts as a carminative, which reduces the Mal-metabolism of food and body tissues (*Rasa-Raktadi dhatu*). *Dhariyarishta* facilitates for better working by its Carminative, Digestive and *Rasayana* effect. However, *Amalaki* has *Rasayana* effect by which it re-establishes Rasa, *Rakta* and other *Dhatus* thus preventing Malnourishment.

CONCLUSION

Iron Deficiency Anemia can be effectively compared with *Pandu roga* on the grounds of its similar signs and symptoms. *Dhatriyarishta* contains mainly *Amalaki*, which is best *Rasayana, Tridosha hara, Vatanulomak* and *Pitta shamaka. Arista* is prepared through *Sandhan Kalpana*, and it is a well known fact that due to its *Ashukari* and *Vyvayi* properties it gets easily absorbed in the body channels *(Srotasa*) and thus exhibit the properties of applied drugs at a much faster level. It is obvious that Anaemia is most common among females due to menstruation, poor general health, improper and inadequate diet which leads to malnutrition leading to Anaemia. *Amalaki* is main ingredient in *Dhatriyarishta,* it contains high amount of Vitamin C, which reduces ferric iron to ferrous iron, which remains soluble even at neutral pH and is better absorbed. Even when the diet is poor in iron, Vitamin C supplement with each meal enhance iron absorption. Vitamin C taken in divided doses with each meal will increase iron absorption to a greater extent and thus preventing Anemia. During the Follow-up study we observed that a maximum rise in Appetite. *Dhatriyarishta* showed better respond IDA due to metabolic effect. The Study was on a small sample. Studies with larger and long-term follow-up should be done to continue.

REFERENCES

1) Charaka Samhita (Vol II) Prof P.V. Sharma, Chikitsa Sthana Panduroga Chikitsitam 7th edi., Chuakhambha Orientalia,273(2005).
2) Savill's System of Clinical Medicine 14 edition, LONDON Edward Arnold Publishers 813)1964.
3) Charak Samhita (Vol I) Prof P V Sharma, Vividhasheetpitiyadhyay, Sutra Sthana,9th edition, Chaukhambha orientalia, Varanasi 226(2005)
4) Ashtang Hridaya (Vol II) Prof K.R.Srikantha Murthy, Pandurogashophavisarpanidanam-Nidana sthana, 5th edition. Chuakhmbha Krishnadas Academy Varanasi 122(2003) A.D.
5) Davidson: Blood disorders, Principles & Practice of medicine 20th edition, Charchil living stone ELSEVIER UK 1025(2006)

6) Charaka Samhita (Vol II) Prof P V Sharma, Chikitsa Sthana Panduroga Chikitsitam 7th edi. Chaukhambha Orientalia, 283(2005).

7) Dravyaguna Vijnan (Vol II) Prof.P V Sharma, Chaukhambha Bharti academy 758(2006).

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