



A CLINICAL STUDY TO EVALUATE THE EFFICACY OF GUDA HARITAKI IN VATAJA PANDU (IRON DEFICIENCY ANAEMIA) IN CHILDREN

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ABSTRACT

Ayurveda is the study of life. The meaning of *Swastha* is harmony province of *Dosha, Dhātu, Agni, and Mala* alongside *Prasanna Aatma, Mana, and Indriyas*. The main reason behind the occurrence of the disease is *Dhātu Vaishamyata*. *Pandu Roga* is one among them which happens because of *Dhātu Vaishamyata*. *Pandu Roga* is depicted in practically all credible *Ayurvedic* writings. As the name means the fundamental component of *Pandu Roga* in *Pandutva*. As indicated by *Acharya Charaka*, it is one among the *Rasavaha Srotodushti*. *Acharya Sushruta* has referenced it as *Raktavaha Srotodushti*. The changing way of life of an individual through *Aahara* and *Vihara* assumes a significant part in the indication of different sicknesses. *Pandu Roga* is likewise one of them. Our defective dietary propensities and way of life produce *Aama*, which further causes *Agnimandya* and eventually, *Amayukta Aahararasa* delivered. It hampers *Rasa Dhātu Utpatti* and shows *Pandu Roga*. Vitiating *Pit-ta* is answerable for the creation of *Poshaka* (supplement segment) from the *Rasadhātu* subsequently exhaustion of *Rakta* happens. So, the detail information on *Nidanapanchaka* and types of *Pandu Roga* will help in its finding and management in this cutting-edge time too. Defective dietary intake and improper assimilation of iron are the reasons for Iron Deficiency Anaemia, which presents with significant symptoms such as the feeling of weakness, tiredness, shortness of breath, palpitations, koilonychia, glossitis, dysphagia, and modified impression of taste.

The cutting edge of the executives of Iron Deficiency Anaemia is to discover and treat the fundamental reason and to offer iron to address the Anaemia. The best arrangement of oral iron is Ferrous Sulfate, containing 20% elemental iron, which is the most effective and economical. However, this has an antagonistic impact like nausea, vomiting, abdominal pain, constipation, diarrhea, and teeth staining. In *Ayurveda*, a different combination of herbal drugs is explained without any adverse effects on the patient.

Aims and Objectives of the study: To evaluate the efficacy of *Guda Haritaki* Granules in *Vataja Pandu*, to provide an economic & safe herbal formulation in *Vataja Pandu*, and to study the adverse effect of the drug during the clinical trial.

Material & Methods- To fulfill the above Aims & Objectives, a Total of 60 Patients were selected between the age group of 04-12 years of age with symptoms of *Vataja Pandu*. Complete history, hematological tests, and stool (routine & microscopy) tests were used for the evaluation of the patients. The dose of *Guda Haritaki* Granules should be given according to age, orally twice a day, and the duration of the trial was 4 months.

Statistical Analysis Used- Wilcoxon signed-rank test and unpaired student's t-test were used to check the significance of subjective criteria & objective criteria.

Results- After analyzing the data statistically in 47 patients, statistically highly significant results were found in *Panduta*, *Balakshaya*, *Shirahashoola*, *Rukshata*, and *Aruchi*. Statistically highly significant improvement was found in Hb%, Serum Iron, and T.I.B.C. (Total Iron Binding Capacity).

After full observation of treatment modules, it was found that:

In this study number of the patient who completely improved was 05 (10.64%), a number of patients marked improvement was observed in 08 patients (17.02%), moderate improvement was observed in 26 patients (55.32%) and mild improvement was observed in 08 patients (17.02%), whereas unchanged was observed in none of the patients.

Conclusion- *Guda Haritaki* Granules proved quite effective in managing the patients of *Vataja Pandu* due to its *Doshashamaka*, *Srotoshodhana*, *Raktaprasadaka*, *Rasayana*, and *Pandughna* properties.

Keywords: *Ayurveda*, *Pandu Roga*, *Dhatu Vaishamyata*, *Aama*, *Agnimandya*, Iron Deficiency Anaemia.

INTRODUCTION

Ayurveda, an exceptional piece of Indian philosophy is truly one of the incredible marvels of ancient Indian science. *Ayurveda* is not just arrangements for the cure of the disease yet for addition prevention of disease. It gives the plans to improve the way of life by giving the description of *Dincharya* (everyday routine), *Ritucharya* (seasonal regimen), rules of dietetic, and so on.

In this 21st century, the way of life has changed quickly. Presently there is a contest in each field, so a large portion of people have lots of stress. As the way of life is changing in the general public, their eating routine, and propensities, are additionally changing quickly. This is the justification for why people lack the capacity to deal with themselves, and even moved

their food propensities to inexpensive food, having exceptionally less nutritional value.

Moreover, the green vegetables accessible in the market are developed under the high grouping of composts, just to expand the yield of vegetation. The innovation has made every one of the vegetables accessible consistently. Along these lines, the level of nutritional components (i.e., carbohydrates, proteins, vitamins, and minerals) diminished up to an extraordinary degree. All the above conditions add to the malnourished status, particularly in the higher and middle monetary classes. Then again, about 36.7% of the population is below the destitution line in our country. They buckle down for the duration of the day yet couldn't get sufficient money to take care of them and their family. They are also malnourished.

They are bound to live in a thick population under unhygienic environmental elements. Hence, we can conclude that the higher monetary class and lower financial class all are malnourished under various conditions.

Presently a-days people take fast food routinely; additionally, they show carelessness in dealing with their health. Thus, people experience the adverse effects of different diseases. Among these disease "PANDU ROGA" is an extremely common disease, seen especially in developing nations like India. For the therapy of different diseases, there are distinctive medical sciences like Allopathy, *Ayurveda*, Homeopathy, etc. *Ayurveda* is one of the most ancient systems of medicine. The point of *Ayurveda* is "Swasthasya swasthya rakshanam" and "Aturasya vikar prashamanam" i.e., to keep up with wellbeing and absolute destruction of disease. The different diseases and the standards of treatment propagated in ancient texts actually hold great even following millennia and extraordinary development of the modern system of medicine. Subsequently, people are redirected toward *Ayurveda*.

Iron deficiency anaemia is considered one of the most significant problems in developing countries like India. Particularly in children, the diet should contain all the essential nutrients during rapid growth and development. If nutrition is adequate, growth is bound to occur normally. Nutritional disorders result from either deficiency or excess of any nutrients^[1]. Haemoglobin can be increased by the supplementation of deficient nutrients. Such nutrients are iron, proteins, and vitamins (C, B12 & folic acid).

Children are more susceptible than adults due for many reasons-

- Their developing age and transformation to the new climate.
- Lack of cognizance about food and hygienic propensities.
- Initial lower insusceptible reaction to more current diseases and invasions.

Likewise, absence of attention to guardians about the dietary benefits of food, even children from wealthy families experience the ill effects of poor nourish-

ment prompting different illness conditions like **ANAEMIA**.

Anaemia is known to effectively affect the health of children, can be related to the debilitation of intellectual execution, mental development, coordination, language advancement, and academic accomplishment, and furthermore expanded morbidity from infectious diseases.

PREVELANCE

The measurable study of WHO shows a predominance of 74% of IDA in Indian children^[2]. In spite of the fact that the gauge of the prevalence of anaemia differs broadly and precise information is regularly inadequate with regards, it tends to be accepted that in asset-poor regions significant extents of young children are Anaemic. Despite the fact that anaemia has been enrolled as a general medical issue for a long time, little advancement has been accounted for and the worldwide prevalence of Anaemia remains unsuitably higher. The population groups with the highest prevalence of anaemia are Infants and Toddlers (48%), Pre-schoolers (25%), School children (40%), non-pregnant women (35%), Pregnant women, and the Elderly (about 50%). WHO and UNICEF thusly re-emphasize and ask for fostering a compelling administration programme^[3].

According to National Family Health Survey (NFHS) III data, the incidence of anaemia in urban children is 71%, in rural is 84% and overall is 79%.

In *Ayurvedic* classics, the disease is portrayed as "PANDU". Though *Pandu* in children isn't depicted in *Brihatrayi* of *Ayurveda*, *Acharya Kashyapa* depicted the indications as pallor of the sclera, nails and face, peri-umbilical and periorbital oedema, indigestion and fatigue in infants and young children^[4]. *Ayurveda* clarifies the *Nidanapanchaka* and *Chikitsa* of disease in an all-encompassing way. *Ayurvedic Chikitsa* focuses on the legitimate working of "AG-NP" which is vital for appropriate digestion, absorption, and assimilation of supplements to fulfill the need of the body, rather than offering significance to just IRON therapy and IRON stacking, its need of time to treat the children of *Pandu* with *Ayurvedic*

approach for their great wellbeing, development, and advancement.

Anaemia is characterized as the decrease of hemoglobin concentration or the hematocrit beneath the range of values happening in healthy persons^[5]. Hemoglobin esteem under 11% g/dl, 11.5% g/dl, and

12% g/dl are viewed as reference esteems for anaemia in age groups 6 months - 5 years, 5-11 years, and 12-13 years respectively^[6].

Anaemia classification based on Hb values:-

Grades of Anaemia	ICMR, India	WHO
Mild	10-11 gm/dl	9-11 gm/dl
Moderate	7-10 gm/dl	7-9 gm/dl
Severe	4-7 gm/dl	< 7 gm/dl
Very severe	< 4 gm/dl	-

Iron deficiency anaemia is characterized as the exhaustion of iron stores in the body where iron loss exceeds iron admission for quite a while and inadequate iron is accessible for typical hemoglobin production^[7].

Clinical signs and symptoms of anaemia result from the decreased conveyance of oxygen to the tissues and hence are identified with the brought down hemoglobin concentration and blood volume and dependent upon these changes. Iron inadequacy unfavorably influences the intellectual exhibition, conduct, and actual development of infants, pre-school and school-aged children; the immune status and morbidity from diseases of all age gatherings; and the utilization of energy sources by muscles and in this way the actual limit and work execution of adolescents and adults of all age groups. In particular, iron deficiency anaemia during pregnancy increases perinatal risks for mothers and neonates; and expands generally infant mortality. As a general rule, the clinical indication incorporates pallor, fatigue, irritability, weakness, dyspnoea, fragile nails, pica, diminished appetite, and headache^[8]. The *Vata* prevailing assortment of *Pandu Roga* goes connected at the hip with iron deficiency anaemia (IDA). *Pandu Roga* has several causes like unwholesome food (too hot, sour, salty or caustic articles, enormous amounts of oil), *Viharaja Hetu* for example day sleep and active work when a meal is being digested, and the concealment of normal desires. In all diseases is a *Tridoshaja* element with overwhelming *Pitta*. Vitiating *Pitta* headed to *Hridaya* (Heart) and spread through the ten

Dhamani all through the body by *Vruddha Vata*. In the wake of entering between layers of skin and muscle (*Pradushyantarmasthitam*) *Pitta* vitiates *Kapha*, *Rakta*, *Twak*, and *Mansa* to create different tints like light or profound yellow (*Haridra*) or green (*Harita*), dryness and so forth. As it advances, different signs and manifestations show up for example *Karnakshweda*, *Alpa Rakta*, *Mansa*, *Meda*, *Daurbalya*, *Angamarda*, *Hriddrava*, *Akshikootashotha* and so on^[9].

The administration of IDA programmes is solely pointed on giving iron and different supplements. Then again different elements that hamper digestion and metabolism are hypothesized as the critical etiological variables for *Pandu*. The formulations recorded in the treatment of *Pandu* incorporate those which can address the metabolism by which absorption and bioavailability of supplements like iron can be upgraded.

NEED FOR STUDY

Innumerable iron-containing allopathic formulations are available in the market for the treatment of Iron deficiency anaemia. The long-term treatment with iron salts is associated with several side effects like Nausea, Vomiting, Abdominal pain, Constipation, Diarrhoea, and Teeth Staining.

In *Ayurvedic* text different combinations of herbal drugs are mentioned by our *Acharyas*. Hence through these medications, this disease can be treated successfully, and also simultaneously appetite, and immunity will get improved without any adverse effects of the drugs on the patient.

With the aim that *Guda Haritaki* is mentioned in the management of *Vataja Pandu Roga* (Iron deficiency anaemia) the purposes are:-

- To give symptomatic relief
- To restore the normal Hemoglobin level
- To ensure the normal growth and development of children
- To improve body immunity.

Considering all of the above the study is planned to evaluate the efficacy of *Guda Haritaki* mentioned in the *Bhaishjya Ratnawali* under *Balrogadhikar* has been chosen for the management of *Vataja Pandu Roga* (Iron deficiency anaemia) in children.

In this research work, 60 patients were registered, and the duration of the trial was 3 months with medicine.

MATERIAL & METHOD

In the present research work, the study has been done on the evaluation of **GUDA HARITAKI IN VATAJA PANDU** to find out the efficiency of drugs.

1. AIMS & OBJECTIVES:

- To evaluate the efficacy of *Guda Haritaki* in *Vataja Pandu Roga* (IDA).
- To provide an economic and safe herbal formulation in *Vataja Pandu Roga*.

DETAILS OF THE GROUP:

Groups	Registered Patients	Completed Treatment	Formulation	Dose & Duration
Single	60	47	<i>Guda Haritaki</i> Granules	According to age 04-12 years (Two divided doses) for 3 Months.

- Out of 60 patients, only 47 patients could complete their treatment. 13 patients had left against their medical advice. Hence, the final assessment of the result was done only in 47 patients.

Inclusion Criteria:

- Children have classical features of *Vataja Pandu*.
- Children with Hb% concentration 08 to 11 gm/dl (for either sex).
- Children between the age group of 04-12 years of age were included in the present study.

- To study the adverse effect of the drug during the clinical trial.

2. MATERIALS & METHODS:

PLAN OF STUDY

a) Conceptual Study

b) Clinical Study

a) Conceptual study:

Detailed study of *Vataja Pandu Roga* will be studied from various sources of *Ayurveda* and

Modern science, previous & ongoing research works, journals, and publications.

b) Clinical study:

Selection of the Patients:

- Sample size calculated as per the formula; $n = 4pq/d^2$, the sample size is estimated to be 300.
- Due to time constraints and COVID-19, we were limiting our sample size to 60.

A series of 60 patients suffering from *Vataja Pandu Roga* was selected from the O.P.D. of *Kaumarbhritya* Department, Rishikul Campus, Uttarakhand Ayurved University (Haridwar), for the purpose of a clinical trial of the present study. The patients were selected on the basis of *Vataja Pandu Roga* (with Hb% concentration 08 to 11 gm/dl for either sex) clinical features, elimination & challenge test.

Exclusion Criteria:

- Age < 04 years & > 12 years.
- Hb concentration less than 08 gm/dl.
- Prediagnosed cases of blood dyscrasias e.g., Thalassemia, etc.
- Prediagnosed cases of Hemoglobinopathies e.g., Sickle cell anaemia, etc.
- Prediagnosed children have hemorrhoids, peptic ulcers, and malignancy.

- Prediagnosed children having positive stool investigation reports for parasites for the clinical study.
- Prediagnosed children of Malabsorption syndrome.

Type of study:

- Randomized open clinical trial.
- Period of study: 4 Months
 - a) With Drug - 3 Months
 - b) Without Drug - 1 Month.
- Follow up: There are 7 follow up:
 - Each at the interval of 15 days and a subsequent follow-up without medicine 1
- **Dose of the drug: According to young's formula:**

$$\text{Dose in children} = \frac{\text{Adult dose} \times \text{Age (in a year)}}{\text{Age (in a year)} + 12}$$

a month after the end of the trail.

Criteria for withdrawal:

- Personal matter
- Intercurrent illness
- Aggravation of symptoms
- Leave against medical advice (LAMA).

STUDY DESIGN:

- **Grouping** - A single group.
- **No. of patients** - 60
- **Formulation of drug** - Granules
- **Route of administration** - Oral

Age (in years)	Dose (Two divided doses)
4 years	3 - 6 gm
5 years	3.5 - 7 gm
6 years	4 - 8 gm
7 years	4.5 - 8.5 gm
8 years	5 - 9.5 gm
9 years	5 - 10 gm
10 years	5.5 - 11 gm
11 years	5.5 - 11.5 gm
12 years	6 - 12 gm

For the present study, I have taken drug doses of Guda Haritaki according to Sharangdhar Samhita. One Masha for one year child and this One Masha increases every year, up to 16 years. Thus, for the

ages 04 - 12 years, the dose will be 04 Masha to 12 Masha in a divided dose.

Contents of Guda Haritaki:

Guda
Haritaki

ASSESSMENT CRITERIA:

a) **On the basis of Subjective Parameters:** The following clinical finding was assessed before and after treatment.

Parameter	Grade-0	Grade-1	Grade-2	Grade-3
Panduta (Pallor) [In Jihva (tongue), Nakha (nail), Netra (sclera)]	Absent in Jihva, Netra, Nakha	Present in Jihva	Present in Jihva & Netra	Present in all regions

Balakshaya (Weakness)	No feeling of weakness during daily activities	Sometimes feeling weakness but perform daily activities	Often feeling weakness but affecting daily activities	Daily activities were reduced due to weakness
Shirashoola (Headache)	No Headache	Occasional headache at the time of work	Frequent headaches after daily work	Constant headaches present even if resting
Rukshata (Twaka, Nakha, Mukha, Hastapadatala)	Not present	Present in any 1 of these regions	Present in any 2-3 of these regions	Present in all regions
Aruchi (Anorexia)	The normal urge to have a food	Dislike to have a portion of food but take normal diet	Less take of his/her previous diet	Very less take of his/her previous diet

b) Objective Parameter: INVESTIGATIONS:

- Hb %
- G.B.P. (General Blood Picture)
- Serum Iron
- T.I.B.C. (Total Iron Binding Capacity)
- Stool Test (routine & microscopy).

STATISTICAL ANALYSIS:

Data were analyzed using the GraphPad InStat Version 3.10

To obtain the efficacy of the drug on objective parameters. Proper statistical analysis was carried out of available data by applying the following statistical tests:

- For comparison of subjective criteria before and after treatment '**The Wilcoxon signed-rank**' test was applied.
- For comparison of objective criteria before and after treatment, '**an unpaired student's t**' test was applied.

3. THE OBTAINED RESULTS WERE INTERPRETED as-

Sr. No.	P-value	Significance
1.	> 0.05	Not Significant
2.	≤ 0.05, > 0.001	Significant
3.	≤ 0.001	Highly Significant

4. OVERALL ASSESSMENT SCALE-

- **Complete improvement:** 100% relief
- **Markedly improved:** 76-99% relief
- **Moderately improved:** 51-75% relief
- **Mild improvement:** 26-50% relief

- **Unchanged:** < 25% relief

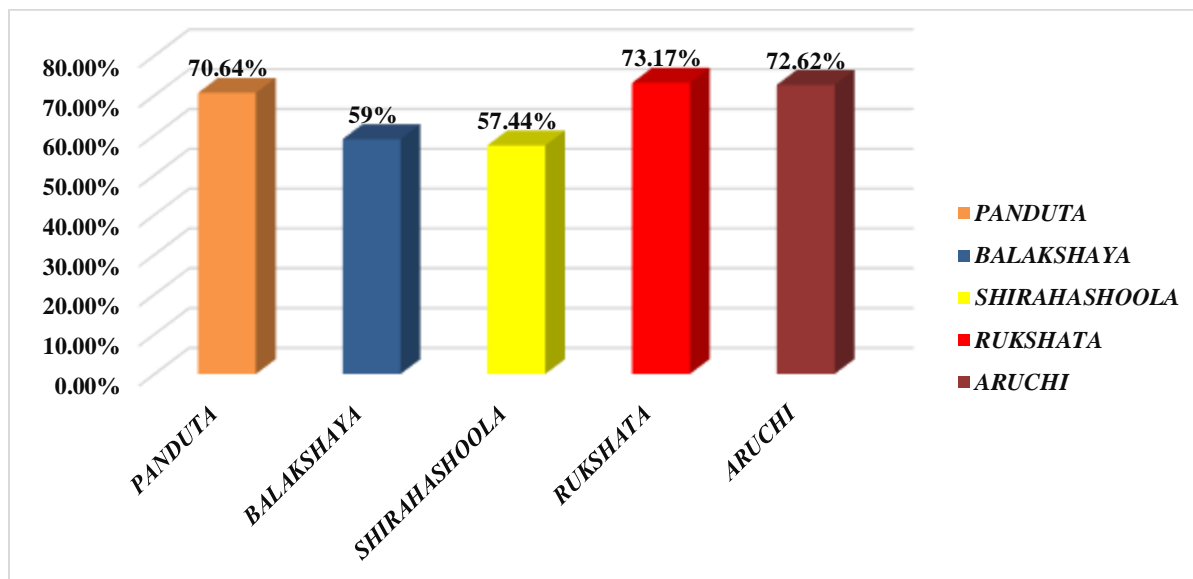
Discussion on the Effect of Treatment

In this study, 60 patients were registered. Out of 60 patients, only 47 patients have completed their follow-up and treated by *Guda Haritaki* Granules.

a) SUBJECTIVE PARAMETER

TABLE 01:

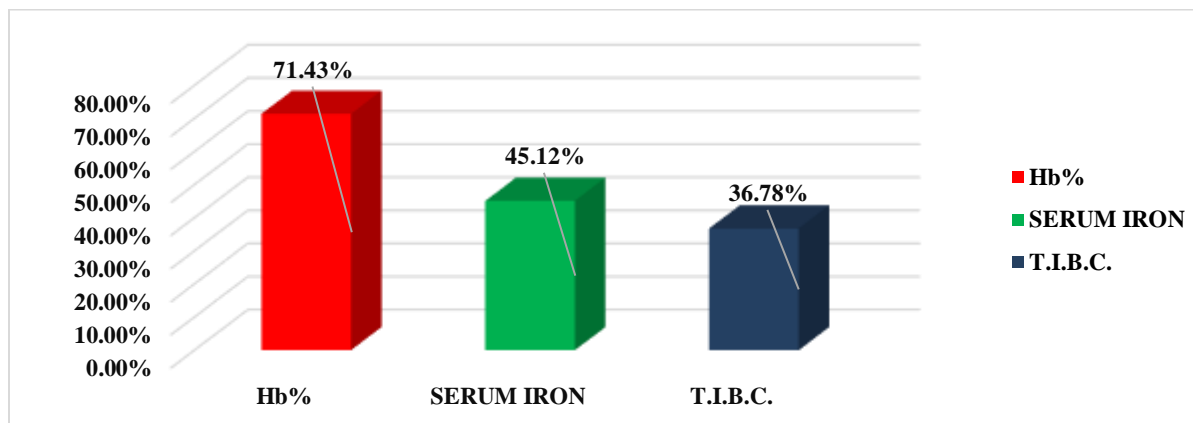
SYMPTOMS	% OF RELIEF	SIGNIFICANCE
Effect on <i>Panduta</i>	70.64%	Highly Significant
Effect on <i>Balakshaya</i>	59%	Highly Significant
Effect on <i>Shirashoola</i>	57.44%	Highly Significant
Effect on <i>Rukshata</i>	73.17%	Highly Significant
Effect on <i>Aruchi</i>	72.62%	Highly Significant



b) OBJECTIVE PARAMETER

TABLE 02:

INVESTIGATIONS	% OF RELIEF	SIGNIFICANCE
Hb%	71.43%	Highly Significant
Serum Iron	45.12%	Highly Significant
T.I.B.C.	36.78%	Highly Significant



TOTAL EFFECT OF TREATMENT MODULE IN THIS STUDY

a) TABLE 03– Showing Improvement in Subjective Criteria:

Symptoms	Mean Score		D	Relief %	W±	p-value	Significance
	B.T.	A.T.					
<i>Panduta</i>	2.369	0.695	1.674	70.64	1081	<0.0001	HS
<i>Balakshaya</i>	1.5641	0.6410	0.9231	59	528	<0.0001	HS
<i>Shirhashoola</i>	1.4242	0.6060	0.8182	57.44	378	<0.0001	HS
<i>Rukshata</i>	1.413	0.379	1.034	73.17	351	<0.0001	HS
<i>Aruchi</i>	1.953	0.534	1.419	72.62	946	<0.0001	HS

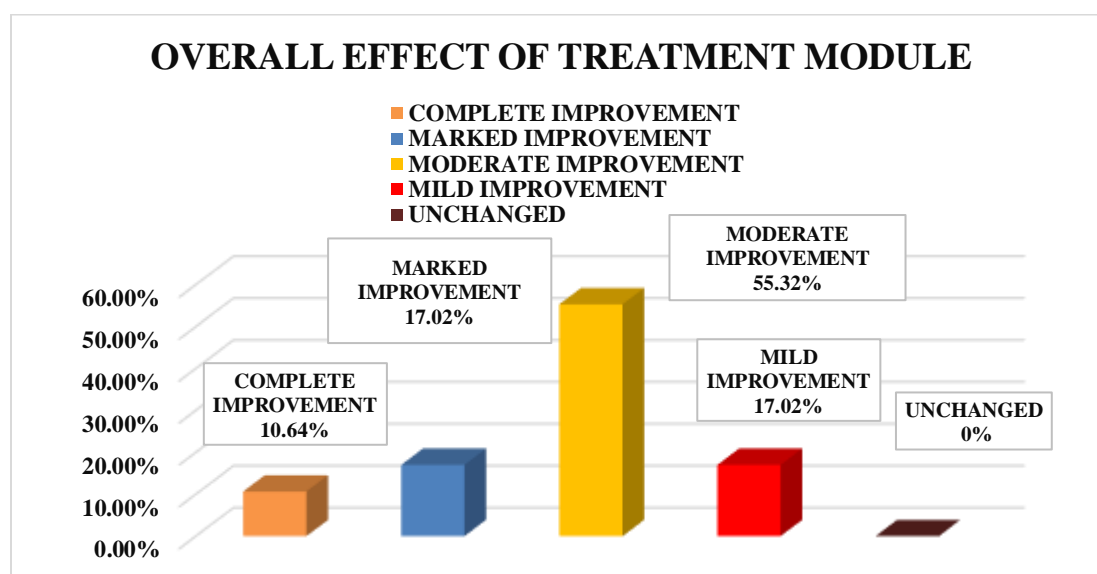
b) **TABLE 04**– Showing Improvement in Objective Criteria

Parameters	Mean Score		D	Relief %	t-value	p-value	Significance
	B.T.	A.T.					
Hb%	10.180	11.489	-1.309	71.43	34.254	<0.0001	HS
Serum Iron	113.460	115.799	-2.339	45.12	12.303	<0.0001	HS
T.I.B.C	343.106	335.860	7.246	36.78	9.790	<0.0001	HS

OVERALL EFFECT OF THE TREATMENT MODULE

After full observation of treatment modules, it was found that in this study:

- The number of patients completely improved was 05 (10.64%), a number of patients marked improvement was observed in 08 patients (17.02%), moderate improvement was observed in 26 patients (55.32%) and mild improvement was observed in 08 patients (17.02%), where unchanged was observed in none of the patients.



CONCLUSION

On the basis of literary review, clinical study, observation, results, and discussion, the final conclusion of the present work-

- Iron deficiency anaemia is considered one of the most significant problems in developing countries like India, due to poor financial status, lower hygiene, and sanitation.
- Children are inclined to various infections, parasitic infestations, and nutritional disorders that obstacle the linear growth and development of children.
- It is especially common in infancy because both breasts, as well as cow milk, do not provide the baby's need for iron.
- Secondly, poor iron stores in premature babies predispose to further deficiency so that, at about the third month (the time for maximal physiologic reduction of hemoglobin), there may be marked iron-deficiency anaemia.
- Twins commonly become iron deficient. At times, only one of them may suffer.
- Preschool age and adolescence are particularly more vulnerable to IDA because of rapid somatic growth.
- According to National Family Health Survey (NFHS) III data, the incidence of anaemia in urban children is 71%, in rural is 84% and overall is 79%.

- In this present study, we found that *Vataja Pandu* is a *Pitta Pradhana Tridoshaja*, and *Varnopalakshita Vyadhi*, and *Dushya* were *Rasa*, *Rakta*, and *Mansa*.
- *Rasavaha*, *Raktavaha Srotas Dushti* occur in *Vataja Pandu*.
- Management of *Vataja Pandu* is done by *Doshashamaka*, *Srotoshodhana*, *Rasayana* & *Pandughna*.
- *Pandu* is depicted as “*Pitta Pradhana Tridoshaja Vyadhi*”, everyone has their specific *Dosha* predominance. In the event of *Vataja Pandu*, the indulgence of *Nidana* leads to vitiates *Tridosha* with the predominance of *Pitta* and *Vata Doshas*. These aggravated *Doshas* vitiates *Asrik*, *Twacha*, and *Mansa* resulting in the formation of *Shithilata* and *Gaurava* in *Dhatu*s which will further lead to *Dosha-Dushya Sammurchana*.
- Here *Laghu*, *Ruksha* & *Ushna* properties of the Granules help in the *Pachana* of *Aama* in the body. Also helps in the removing of blocked channels of the body i.e., *Srotoavrodha* will be cured and *Doshanulomana* will be achieved which further helps in the destruction of *Srotodushti (Sanga)*.
- Now *Pitta* and *Vatakara Nidanas* produce *Aama* which further causes *Vishamagni* and eventually, *Aamayukta Aahararasa* delivered. It hampers *Rasadhatu utpatti* as a result *Rakta Poshaka Sarabhaga* is not derived from *Rasadhatu* and *Varna*, *Bala*, *Sneha*, and properties of *Oja* get exceedingly reduced on account of the vitiation of *Dosha* and *Dushyas*. So, the patient becomes *Alpa Rakta*, *Alpa Meda*, *Nihsara* & *Shithilendriya* and he suffers from *Vaivarnyata*.
- *Guda Haritaki* Granules which are advised in the management of *Vataja Pandu Roga* possess *Snigdha Guna*, *Madhura-Amla Rasa*, *Ushna Virya* and *Anulomana* properties that help in the pacifying of *Vata Dosha* while *Madhura-Tikta-Kashaya Rasa* helps in the pacifying of *Pitta Dosha* and *Laghu*, *Ruksha Guna*, *Katu-Tikta-Kashaya Rasa*, *Ushna Virya* and *Srotoshodhana* properties helps in pacifying the *Kapha Dosha*.
- *Deepana*, *Pachana*, *Rasayana*, *Yakriduttejaka*, and *Raktavardhaka* properties of the drugs help in alleviating *Vishamagni* and promote *Dhatupushti* which will lead to the breaking of *Samprapti*.
- As per *Ayurveda* as well as Modern perspective also *Pandu* can be caused by *Krimi* (Parasites), the content of *Guda Haritaki* Granules acts on parasites by their *Krimighna* properties.
- *Panduta* mainly occurs due to vitiated *Pitta Dosha*, *Rakta Dhatu* as well as *Ojokshaya*. *Pitta Dosha* (Particularly *Bhrajaka* and *Ranjaka pitta*), *Rakta Dhatu*, and *Ojas* are responsible for *Varna* and *Prabha*. When *Pitta Dosha* vitiates *Rakta Dhatu* the loss of complexion or *Panduta* occurs. The ingredients of *Guda Haritaki* Granules have *Madhura-Tikta-Kashaya Rasa*, *Snigdha Guna*, *Madhura Vipaka*, *Rasayana*, and *Raktashodhaka* properties which will pacify the *Pitta Dosha*, *Rakta Dhatu* and *Ojokshaya* result in reducing the *Panduta*.
- As per disease, *Balakshaya* occurs due to *Dhatukshaya* and *Ojokshaya*. *Guda Haritaki* Granules have *Agnideepaniya*, *Rasayana*, *Bruhaniya*, *Yakriduttejaka*, *Raktashodhaka*, *Raktaprasadaka*, and *Balya* properties which will help in pacifying the accumulated *Doshas* and promote *Dhatupushti* as well as *Ojas*.
- Vitiation of *Pitta Dosha* leads to *Agnimandya* and producing *Aruchi*. The ingredient of *Guda Haritaki* Granules is an ideal mixture of *Deepana*, *Pachana*, and *Tridosha shamaka* properties. It promotes the downward movement of *Vata* in the gut and increases digestive power.
- Whereas *Shirahashoola* and *Rukshata* occur due to *Vataprakopa* along with *Rasa Dhatukshaya*. The drugs having *Snigdha Guna*, *Madhura-Amla Rasa*, *Ushna Virya*, and *Anulomana* properties help in the pacifying of *Vata Dosha* and *Rasa Dhatukshaya*.
- *Guda* contains iron, copper, mineral salts, and some vitamins, which help in the proper formation of Hemoglobin. Due to the presence of sucrose, it provides energy for a longer time thus

decreasing the symptoms such as fatigue and weakness.

- *Deepana, Pachana, Anulomana, Srotoshodhana, Raktashodhaka, Raktaprasadaka, Rasayana, Tridoshaghna*, Antioxidant, and Hepatoprotective properties which help in minimizing the clinical features like *Aruchi, Balakshaya, Panduta, Rukshata*, and *Shirhashoola*.
- *Pancharasayukta Haritaki* helps in better absorption of various micronutrients leading to the formation of *Prashasta Dhatu* and reducing signs & symptoms of Iron deficiency anaemia.
- In subjective parameters, *Panduta, Balakshaya, Shirhashoola, Rukshata*, and *Aruchi* highly significant results were observed during this study.
- In objective parameters, Hb%, Serum iron, and T.I.B.C. highly significant results were observed during this study.
- The number of patients who completely improved was 05 (10.64%), the number of patients marked improvement was observed in 08 patients (17.02%), moderate improvement was observed in 26 patients (55.32%) and mild improvement was observed in 08 patients (17.02%), where unchanged was observed in none of the patients.
- **It was concluded that Guda Haritaki Granules are effective for the management of Vataja Pandu in children and there were not any side effects seen on any patient during the clinical trial.**

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