

**“CLINICAL STUDY ON PANDU ROGA W.S.R TO IRON DEFICIENCY ANAEMIA AND ITS MANAGEMENT BY MADHUYASHTI YOG AND GUDA HARITAKI”****Dr. Rakhi G Nishane<sup>1</sup>, Dr. Archana S. Dachewar<sup>2</sup>**

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**ABSTRACT**

Pandu roga, as the word describes itself that there is alteration of normal skin colour i.e. pale, yellowish discolouration of skin; thus it's a Varnopalakshita Vyadhi. Pandu roga is described in Bhrita trayees and Laghu trayees both.

Acharya Charak considered Pandu is a disease of Rasavaha strotasa<sup>1</sup> while according acharya sushrat pandu is a disease of Raktavaha strotasa<sup>2</sup>. Clinical manifestation of pandu roga are very much similar to that of iron deficiency anaemia. Tikshna shodhana, shaman chikitsa for panduroga are mention in ayurvedic text.

There is need to look for the ayurvedic treatment of Pandu roga which is coast effective and having less side effects. In this study 108 patients having symptoms of panduroga were selected and randomly divided into 2 groups. In group A, patients were treated with Madhuyashti yog<sup>3</sup> and in group B, patients were treated with Guda haritaki<sup>4</sup>. The data shows that statistically both groups are equally effective in managing the disease panduroga.

**KEYWORDS:** Panduroga, Iron deficiency anaemia, Anaemia, Madhuyashti, Guda haritaki.

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## INTRODUCTION

Panduroga is pitta pradhan vyadhi<sup>5</sup>. Pitta get vitiated due to hetu sevana and in turn it vitiates rasa-rakata and other dhatus. Pitta and oja are responsible for normal body color and complexion. In panduroga pitta dosha and ultimately oja get vitiated which resulting into pale discolouration of skin. Daurbalya, Aruchi, Bhrama, Shithilaendriya, Raktalpata, Medalpata, Nissarta, Vaivarnya, Ojogunakshaya etc. are the Samanya Lakshanas of Pandu Roga<sup>6</sup> given in Ayurvedic text which has very close resemblance with the description of iron deficiency anaemia available in modern texts in terms of causes, Aetiopathology, Sign-symptoms and Treatment. The commonest type of anaemia is Iron Deficiency Anaemia which is most prevalent nutritional deficiency disease in both the developed and developing countries with higher prevalence rate in children, adolescent girls and women of child bearing age. Anaemia is functionally defined as an insufficient red blood cells mass to adequately deliver oxygen to peripheral tissues.<sup>7</sup> Iron Deficiency Anaemia is associated with Fatigue, Breathlessness, Palpitation, Dizziness, Headache, Irritability etc.<sup>8</sup>

Anaemia prevalence in India according to NFHS-5 (National family health survey) 2019 to 2021, it is found non-pregnant women aged 15-49 years who are anaemic (Hb less than 12gm/dl) is 57.2%, pregnant women aged 15-49 years who are anaemic (Hb less than 11gm/dl) is 52.2%, adolescent girls aged 15-19 years who are anaemic is 59.1%, men aged 15-49 years who are anaemic (Hb less than 13gm/dl) is 25% and adolescent boys aged 15-19 years who are anaemic is 59 (Hb less than 13gm/dl) is 31.1%<sup>9</sup>. Anaemia is a major global public health problem and the most prevalent nutritional deficiency disorder in the world. This article presents the Ayurvedic concept of Pandu Roga (Anaemia).

## AIM AND OBJECTIVES

- To observe the effect of Madhuyashti yog (Group A) in Pandu roga
- To observe the effect of Guda Haritaki (Group B) in Pandu roga
- To compare the effectiveness of Madhuyashti yog and Guda Haritaki in the management of Pandu roga assessed by Haemoglobin level with special reference to Iron Deficiency Anaemia.

## MATERIALS AND METHODS

Patients were selected from Kayachikitsa OPD and IPD of Shri Ayurved College, Nagpur

### Inclusion criteria

- Patients with age group of 18-60 years irrespective of caste, sex, occupation and economical status.
- Patients suffering from signs and symptoms of Pandu roga mentioned in Classic Ayurvedic texts i.e. Panduta, Aruchi, Daurbalya, Aarohanaayaasa, Pindikodweshtana, Shwasa, Gaurava, Dravatahridayena.
- Patients with Hb range – )Mild to Moderate anaemia( WHO criteria<sup>10</sup>

Male - 7 to 13.0 g/dl

Female - 7 to 12.0 g/dl

### Exclusion criteria

- Anaemia with genetic predisposition viz. thalassaemia, sickle cell anaemia, leukemia, spherocytosis etc.
- Megaloblastic anaemia, aplastic anaemia, anaemia of chronic disease
- Patients with infectious diseases
- Pregnant and Lactating women
- Disorders associated with gastrointestinal bleeding
- Anaemia cause due to systemic disease like Hypothyroidism/Hyperthyroidism

### Grouping

Sr. No.		Group – A (Trial Drug)	Group – B (Control Drug)
1.	No. Of patients	54 (with 10% drop out)	54 (with 10% drop out)
2.	Drug	MADHUYASHTI YOG	GUDA HARITAKI
3.	Route of Administration	Oral	Oral
4.	Dose	1 Karsha (approx 10 gm) 5gm BD	1 Karsha (approx 10 gm) 5gm BD
5.	Anupan	Madhu	Madhu
6.	Sevankala	After meal	After meal
7.	Duration	30 Days	30 Days
8.	Follow up	0, 15 <sup>th</sup> , 30 <sup>th</sup> Day	0, 15 <sup>th</sup> , 30 <sup>th</sup> Day

## OBSERVATIONS

### 1) DEMOGRAPHIC DATA

In this study, out of 108 patients, pandu roga found in all age group, 81 patients were female, 104 patients were Hindu, 82 patients were married, 39 belonged to Middle Socio Economic class, 42 patients were having Sedentary type of work, 72 patients were having mixed diet (veg, nonveg), 58 patients were having Samagni, 89 had Madhyama Koshtha, 60 patients had no any addiction & 37 were in menopausal state of life. Vata Kaphaj predominance was found in 44 number of patients.

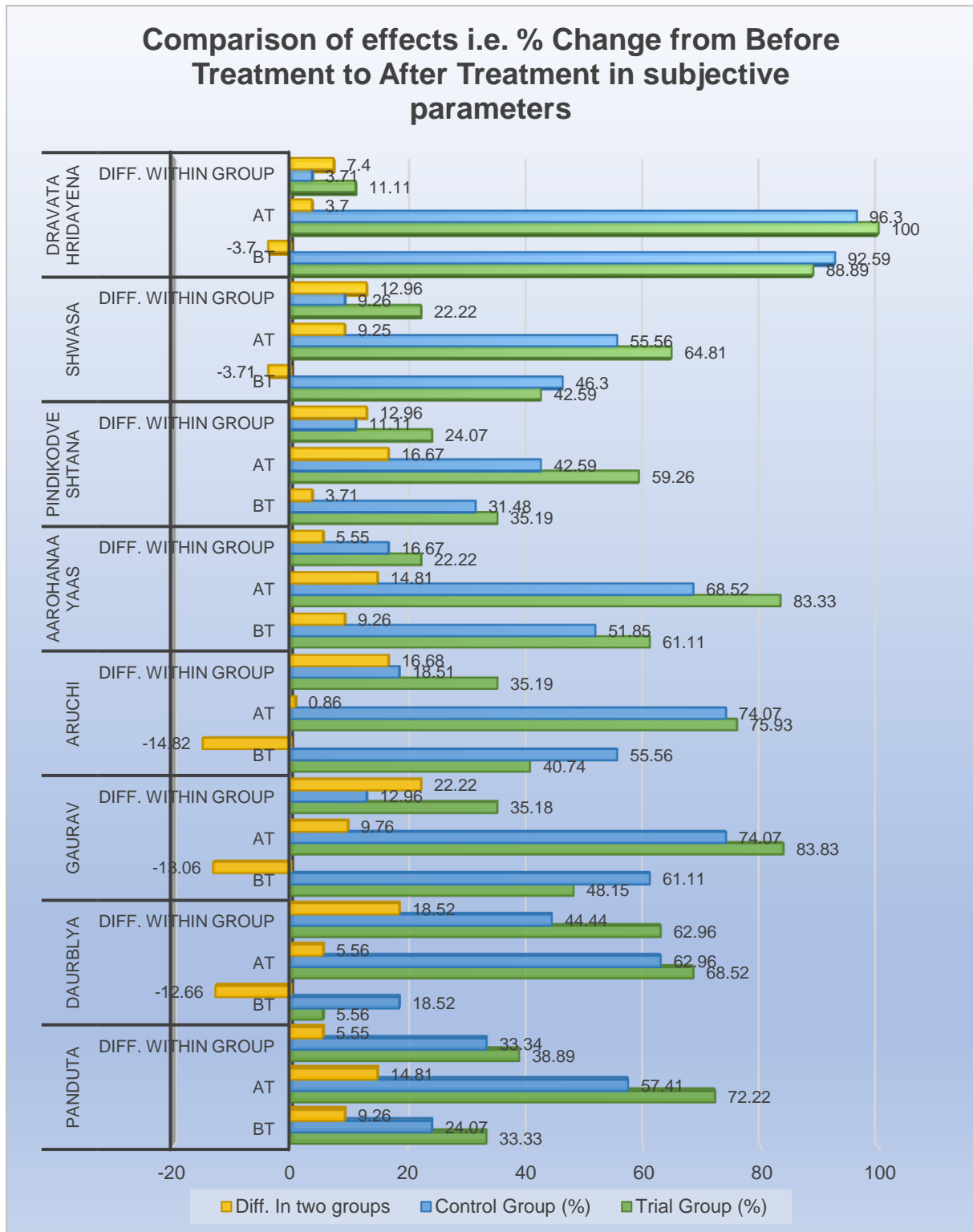
## 2) SUBJECTIVE PARAMETERS

**Table no. 1: Comparison of effects i.e. % Change from Before Treatment (Day 0) to After Treatment (Day 30) in subjective parameters:**

Parameters	Effect In Group A (BT- AT)	Effect In Group B (BT- AT)	% difference in effect (Group A Vs Group B)	P value	Conclusion
Panduta	38.8%	33.3%	5.5%	0.3754	Both t/t are equally effective
	Mild Improvement	Mild improvement	Not Significant		
Daurbalya	62.9%	44.4%	18.5%	0.0536	T/t A is better than T/t B
	Moderate Improvement	Mild improvement	Not Significant		
Gaurav	35.2%	13.0%	22.2%	0.0069	T/t A is better than T/t A
	Mild Improvement	Poor improvement	Significant		
Aruchi	35.2%	18.5%	16.7%	0.0505	T/t A is better than T/t B
	Mild Improvement	Poor improvement	Not Significant		
Aarohanaayaas	22.2%	16.7%	5.5%	0.4662	Both t/t are equally effective
	Poor Improvement	Poor improvement	Not Significant		
Pindikoveshtana	24.1%	11.1%	13.0%	0.0769	Both t/t are equally effective
	Poor improvement	Poor improvement	Not significant		
Shwasa	22.2%	9.3%	12.9%	0.4662	Both t/t are equally effective
	Poor improvement	Poor improvement	Not Significant		
Dravata Hridayena	11.1%	3.7%	7.4%	0.1421	Both t/t are equally effective
	Poor improvement	Poor improvement	Not significant		

**Graph no. 1:**

**Comparison of effects i.e. % Change from Before Treatment (Day 0) to After Treatment (Day 30) in subjective parameters:**



**1) PANDUTA**

Group A (Madhuyashti yog) showed 38.89% and Group B (Guda haritaki) showed 33.34% improvement in Panduta. Difference between both groups is nonsignificant as the level of p value  $>0.05$ .

**2) DAURBALYA**

Group A (Madhuyashti yog) showed 62.9% and Group B (Guda haritaki) showed 44.4% improvement in Daurbalya. Difference between both groups is significant as the level of p value  $<0.05$ .

**3) GAURAVA**

Group A (Madhuyashti yog) showed 35.2% and Group B (Guda haritaki) showed 13.0% improvement in Daurbalya. Difference between both groups is significant as the level of p value  $<0.05$ .

**4) ARUCHI**

Group A (Madhuyashti yog) showed 35.2% and Group B (Guda haritaki) showed 18.51% improvement in Aruchi. Difference between both groups is significant as the level of p value  $<0.05$ .

**5) AAROHANAYASA**

Group A (Madhuyashti yog) showed 22.2% and Group B (Guda haritaki) showed 16.7% improvement in Aarohanaayaas. Difference between both groups is nonsignificant as the level of p value  $>0.05$ .

**6) PINDIKODWESHTANA**

Group A (Madhuyashti yog) showed 24.1% and Group B (Guda haritaki) showed 11.1% improvement in Pindikodveshtana. Difference between both groups is nonsignificant as the level of p value  $>0.05$ .

**7) SHWASA**

Group A (Madhuyashti yog) showed 22.22% and Group B (Guda haritaki) showed 9.26% improvement in Shwasa. Difference between both groups is nonsignificant as the level of p value  $>0.05$ .

**8) DRAVATA HRIDAYENA**

Group A (Madhuyashti yog) showed 11.11% and Group B (Guda haritaki) showed 3.7% improvement in Dravata hridayena. Difference between both groups is nonsignificant as the level of p value  $>0.05$ .

## 2) OBJECTIVE PARAMETERS

Table no. 2

Comparison of mean Hemoglobin (%) in two groups before and after treatment:

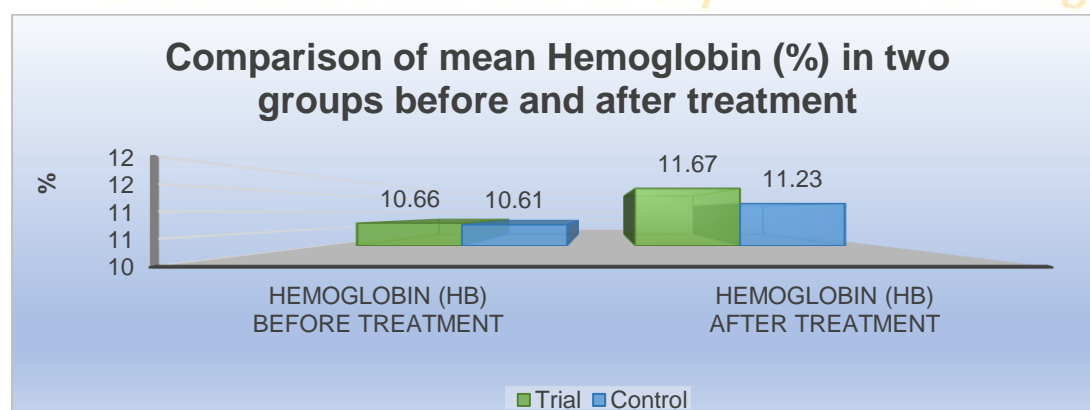
Comparison of mean Hemoglobin (%) in two groups before and after treatment				
Variable	Trial		Control	
	Mean	SD	Mean	SD
Hemoglobin (Hb) before treatment	10.66	0.93	10.61	0.86
Hemoglobin (Hb) after treatment	11.67	1.05	11.23	0.99
P value	0.0001 (Significant)		0.0001 (Significant)	

Graph no. 2

Comparison of mean Hemoglobin (%) in two groups before and after treatment:

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### HAEMOGLOBIN

Group A (Madhuyashti yog) Mean improvement in haemoglobin is 11.67 with SD(standard deviation) 1.05 and Group B (Guda haritaki) Mean improvement in haemoglobin is 11.23 with SD(standard deviation) 0.99.

## DISCUSSION

In this study out of 108 patients, pandu were found in all age group. In young age due pittaadhikya, stress, in middle age due to stress, improper diet, in old age due to lack of nutrition, digestion problems and vatadhikya. According to sex 81 patients were female patients, which indicates that Pandu roga is more common in female because of lack of nutrition and menstrual bleeding. In Prakrutiwise distribution shows that Vata-Kapha predominance was found in 44 of patients, due to Vaya of patients and also intake of the Vata-kapha Vardhaka Nidana.

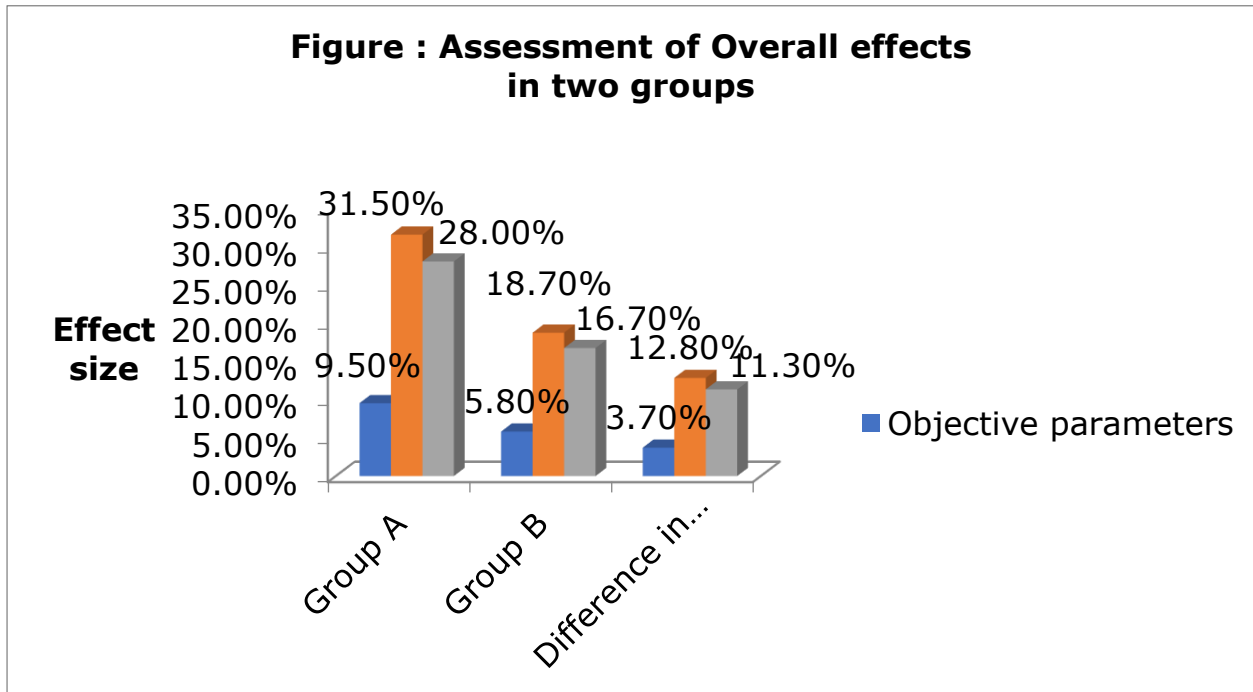
### Overall Improvement in Subjective parameters and Objective parameters from Before Treatment to After Treatment

**Table no. 3**

Parameters	Average* Effect in Group A	Average* Effect in Group B	Result	Conclusion
Objective	9.5%	5.8%	3.7%	Both t/t are equally effective
	Poor improvement	Poor improvement	P=0.4781 Not Significant	
Subjective	31.5%	18.7%	12.7%.	Both t/t are equally effective
	Mild improvement	Poor improvement	P=0.1277 Not Significant	
Overall	28.0%	16.7%	11.3%	Both t/t are equally effective
	Mild improvement	Poor improvement	P -0.1572 Not Significant	



Graph no. 3



The comparative effect of treatment on parameters between trial and control was obtained as

**For subjective parameters** improvement was 31.5% in trial group and 18.7% in control group. It showed clinically group A is better than group B but the statistical difference between trial and control group is less i.e. 12.7% with P value 0.1277 which is not significant, thus **it is indicated that statistically both trial and control group are equally effective in subjective parameters.**

**For objective parameters** improvement was 9.5% in trial group and 5.8% in control group. It showed clinically group A is better than group B but the statistical difference between trial and control group is less i.e. 3.7% with P value 0.4781 which is not significant, **thus it is indicated that statistically both trial and control group are equally effective in objective parameters.**

**The total effect of study** was obtained as 28.0% for trial group and 16.7% for control group. It showed clinically group A is better than group B but the difference between trial and control group is less i.e. 11.3% with P value 0.1572 which is not significant, thus **the overall effect showed that statistically both trial and control group are equally effective.**

#### Discussion on probable mode of action of Madhuyashti yog (Trial Drug)

**Action on Panduta, Daurbalya, Gaurava, Aruchi, Aarohanayasa, Pindikodweshtana, Shwasa, Dravata hridayena**

A prominent and the most important feature of Pandu roga is Panduta (pallor) on skin. Panduta occurs due to qualitative and quantitative deficiency of Rakta dhatu (blood tissues i.e. deficiency of haemoglobin or RBCs- red blood cells). Rakta dhatu, Pitta dosha and Oja are responsible for the Varna (complexion), Prabha (lusture), Kanti. So, due to rakta and pitta dusti oja also gets affected and there is a vitiation of Varna and Prabha and Panduta occurs over the skin.

In trial group, Madhuyashti drug possess Madhur rasa, Madhur vipaka and Sheeta virya which works as Pitta shamak and Raktaprasadak. Due to these properties of drug, trial group is able to reduced the symptom Panduta.

Daurbalyata prominently occur in Pandu rogi. The reason for this is Raktalpta and Ojakshaya which causes the debility to do anything. Depletion of blood tissue results in loss of body strength, weakness. In anemia the metabolic activities hamper due to deficiency of haemoglobin or RBCs- red blood cells & when this condition persists for a long period, debility appears.

In trial group, Madhuyashti has Balya, kshayahar, vishaghna (detoxification) and Rasayana properties. Due to these properties of drug, trial group is able to reduced Daurbalya.

Gaurava is a rasavahastrotodushti lakshana and rasavahastrotasa is affected in panduroga. Gaurava is also found due to strotorodha, dhatushaithilya.

In trial group, Madhuyashti possess Madhur rasa and vipaka due to which saptadhatuwardhana takes place which resulting into reducing rasavahastrotodushti lakshana like gaurava. Also madhuyashti is mild kaphachhedak, balya, kshayahar and rasayana properties. Due to this trial drug is able to reduced Gaurava.

Aruchi is a rasavahastrotodushti lakshana and rasavahastrotasa is affected in panduroga.

In trial group, Madhuyashti possess Madhur rasa, vipaka and sheet virya due to which saptadhatuwardhana takes place which resulting into reducing rasavahastrotodushti lakshana like aruchi. Also madhuyashti is mild kaphachhedak, balya, kshayahar. Due to this trial drug is able to reduced Aruchi.

Aarohanayasa is caused due to dhatushaithilya and daurbalya caused due to strotorodh.

In trial group, yashtimadhu possess balya, rasayan and vatahar properties. Due to these properties, trial drug is able to reduce aarohanaayasa.

In Pandu roga due to hampered metabolism dhatukshaya occurs due to which vata dosha get vitiated and causes pindikodweshtan (calf muscles cramp) Yashtimadhu drug has balya and vatashamak properties due to Madhur vipaka therefore trial group is able to reduce Pindikodweshtana.

Shwasa symptom in panduroga occurs due to dhatukshaya, dhatushailya and vitiated vata. In trial group, the yashtimadhu churna possess kshayahar, vatahar and rasayan properties. Because of these properties of the drug, trial group is able to reduce Shwasa.

Dravata hridayena is occur due to vitiated vata caused due to daurbalya, dhatukshayata.

In trial group, the madhuyashti churna possess balya property and Madhura vipak which contributes to pacify vata dosha and provide strength to heart. Because of these properties drugs of the trial group is able to reduce Dravata hridayena.

### **Action on Objective parameter- Haemoglobin**

Trial group- Madhuyashti acts on circulatory system by enhancing the blood flow and building red blood cells. Madhuyashti is a blood purifier and having haemopoetic action. Madhuyashti is said to be asrajeet. These properties of madhuyashti might have been helpful to increase the haemoglobin level.

### **CONCLUSION**

At the end of this study, following conclusions can be drawn on the basis of literary aspect, action of drugs, observations and results achieved and through the discussion in the present context.

The primary objective has been achieved which was

**“To compare the effectiveness of Madhuyashti yog and Guda Haritaki in the management of Pandu roga assessed by Haemoglobin level with special reference to Iron Deficiency Anaemia.”**

“Madhuyashti Yog is clinically and statistically proven effective with significant P value in reducing subjective parameters i.e. Panduta, Daurbalya, Gaurava, Aruchi, Aarohanaayasa, Pindikodweshtana and Shwasa.

It is also statistically proven effective in improving the objective parameters i.e. Haemoglobin, with significant P value which is considered as the main parameter in evaluation of Iron Deficiency Anaemia.

Panduroga can be corelated with Anaemia (iron deficiency anaemia) due to its identical etiopathogenesis and clinical manifestations.

According to drug review it was concluded that the use of Madhuyashti yog was effective remedy for the management of Pandu roga.

By statistical analysis it is concluded that Madhuyashti yog shows

Significantly better effect than Guda Haritaki in following subjective parameter- Daurbalya, Gaurav, Aruchi.

While Madhuyashti yog and Guda Haritaki statistically proven equally effective in following subjective parameter- Panduta, Aarohanaayaas, Pindikodveshtana, Shwasa, Dravata Hridayena and objective parameter Haemoglobin.

Comparison of total effect of subjective parameters, objective parameters and overall effect between trial and control group was statistically non-significant.

**Statistically, on comparing the overall effect of trial and control group, it is concluded that Madhuyashti yog is equally effective as Guda Haritaki in the management of Pandu roga w.s.r. to iron deficiency anaemia.**

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