

CLINICAL STUDY TO EVALUATE THE EFFICACY OF AMALAKI CHURNA IN PANDU VYADHI" [WITH SPECIAL REFERENCE TO IRON DEFICIENCY ANEMIA]

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ABSTRACT

Iron Deficiency Anemia (IDA) is the most common type of Anemia overall, and is caused when the dietary intake or absorption of Iron is insufficient. According to National family health survey, India report anemia affects an estimated 50% of the Indian population¹. *Rasayana chikitsa* is very beneficial to the patient of *Pandu* (IDA). In this diseases, the *Saarta* (essence) of all *dhatu*s is lost hence the *dhatu*s becomes *Nissar* i.e. loss of qualitative physiological excellence, which ultimately results in *Oja-Kshaya*.² Here 30 patients were selected randomly in the study and given *Amalaki churna* in 3 gms/day. At the end of 30 days symptomatic improvement and increase in Hb% in Group was noticed. No significant therapy is there for chronic Anemias in Modern science, which are often due to metabolic defect, so an attempt has been made to evaluate the efficacy of *Amalaki churna* on Iron Deficiency Anemia. It is reported that this drug has useful role in preventing Iron deficiency Anemia due to metabolic defect.

Keywords: *Panduroga*, Iron Deficiency Anemia, *Amalaki*.

INTRODUCTION

Rakta has been considered as a key factor for the *Jeevana*, (life) *Prinana*, (provides nutrition to other *dhatu*s), *Dharana* and *Poshana karma* of the body.³ It is seen that *Rakta* gets vitiated by *Doshas*, mainly by *Pitta dosha* as *Rakta* is *Pittavargiya* and disease like *Pandu* appears. *Pandu roga* is *Pitta pradhana vyadhi*.² Due to *hetu sevana*, *Pitta pradhana tridosha* gets vitiated and is circulated in the whole body causing *shithilata* in all *dhatu*s which ultimately reduces *Rakta* and *Meda dhatu*. Decrease in *Sneha* and *Rakta Dhatu rupa Oja guna*, *Varna*, *bala* are lost and thus there is *Pandu roga*.²

Drugs like *Haritaki*, *Amalaki*, *Pippali*, *Shilajatu*, *Makshika*, *Loha*, *Mandura*, *Abhraka* having *yogavahi*, *rasayana* properties provides better nourishment to the *Rasaraktadi dhatu*s. Hence, *bala*, *sneha* and *Varna* of the body increase. While studying the *chikitsa* of *Pandu roga*, it is surprising to see that *kalpa* like *Yograjai rasayana*, *Dhatri-avalaha*, *Shilajatu vatak*, *mandura vatak*, *ghritas* is advised.² In *Rasayana adhyaya*, *Charaka* stated that *rasayana chikitsa* should be done in *Oja-kshaya* & *Dhatushithilata* stage where *dhatu*s have lost its original form for qualitative production of *dhatu*. *Sushruta-charya* has mentioned the efficacy of *Amalaki madhu Yoga* in *Pandu Roga*.⁴ Further clinical

AIMS AND OBJECTIVES:

The aim of study was to clinically assess Pandu vyadhi (IDA) and to evaluate the efficacy of ‘Amalaki churna’ in its management.

MATERIALS AND METHODS: A total of 30 patients of Panduroga (IDA) were randomly selected from outpatients and inpatients Department Kayachikitsa; Sumatibhai shah Ayurveda Mahavidyalaya in the year 2009-10. Out of 46 patients, 16 patients are discontinued during the treatment and 30 patients are treated completely.

Inclusion Criteria: -

1. Pandu roga diagnosed according to subjective & objective parameters.
2. Age group between 12-60 years irrespective of sex, religion, socio- economic status, marital status was selected.
3. Blood sample showing hemoglobin percent more than 6gm/dl and less than 12 gm/dl

Exclusion Criteria:-

1. Pandu in age group below 12 years and above 60 years.
2. Mrittikabhakshanjanya pandu.
3. Internal bleeding, Hemorrhoids.
4. Pregnancy induced Pandu

Table no. 1. Assessment Criteria: - on the basis of symptoms (Objective and Subjective)

<i>Lakshanas</i>	Mild +	Moderate ++	Severe +++
<i>Panduta, Netra, Nakha, Jivha, Hastatala Twacha</i>	<i>Panduta</i> present at one Site 0-1	1-3 sites	all the 5 sites
Jwara	99 ⁰ F	99 – 101 ⁰ F	101 -102⁰ F
<i>Gatrashul</i>	VAS(visual analogue scale) scale 0-3	3-6	above 6 upto 10
<i>Daurbalya</i>	Sits up and down in 3 mins more than 15 times	10-15 times	less than 8 times
<i>Nidraluta</i>	8-10 hours	10-12 hours	12- 14 hours
<i>Aarohanasya vishesh shwas</i>	<i>aayas</i> Dyspnoea Stepping upto > 20 steps	between 10-20 steps	< 10 steps

Hemoglobin percentage- Mild : Above 9 gm% but below normal Moderate: 6-9 gm% , Severe : Below 6 gm %

<i>Agnimandya</i>	Digestion in 5hrs.	7 hrs.	9 hrs.
Akshikutashotha	<i>Akshikutashotha</i> 3mm from lower eyelid margin	6mm from lower eye-lid margin	10mm from lower eyelid margin
Hridayaspandan	Palpitation on moderate exertion.	mild exertion	On resting position.

Withdrawal Criteria:-

1. If patients develops any adverse effect.
2. If not responding to treatment and aggravation of symptoms.
3. Patients refuse to continue treatment.

Clinical Study:

1. *Lakshana* of **Pandu roga** was noted in these people and also the causative factors were noted down.
2. Deworming of the patient was done before commencement of the study with Tab.Albendazole 400mg stat
3. 30 patients were given *Amalaki Churna* 3 gm/day in two divided doses with *madhu* (honey) for 1 month at *Madhya bhakta kala* (with and between the meals).

Informed Consent:

Written, valid, informed consent of the patient was taken prior to the commencement of the clinical trial.

Follow Up:

1. Follow up of each patient was taken at the interval of 15 days or earlier if required at the time of clinical assessment.
2. Hemogram was carried out before and at the end of study

Drug Preparation:

1. 80– 100 mesh *Amalaki Churna* was bought from Ayurved Rasashala pharmacy (Pune).
2. Authentification of *Amalaki Churna* was done prior to commencement of the clinical trial.
3. Authenticated Madhu was used for the research work.
4. 1.5 grams dose pack was given to patients and asked to prepare the same for 30 days from 100 grams pack of *Amalaki churna*.

Drug Administration: This clinical work is aimed to study the efficacy of *Amalaki Churna* in *Pandu Roga*.

Null hypothesis: The difference between means of two sets of observations i.e. before and after treatment is same.

Alternate hypothesis: The difference between means of two sets of observations i.e. before and after treatment is different.

Observation and results: Each patient is studied symptom wise. The size of the sample is 30 (n=30).The sample is selected randomly. Data is analyzed by applying paired-t test.

Table value of t-test at 29 degree of freedom is 2.05.

Panduta (Palour of eyes, nails, skin, tongue and palms) Table no. 2

Statistical Analysis for relief from <i>Panduta</i>						
<i>Panduta</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	1.133	0.157	7.215	<0.001	Highly Significant	53.125%

Interpretation:

The table shows the statistical analysis for relief from *Panduta* in *Pandu Roga*, where t-score shows the difference is highly

significant. It means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Panduta*.

Daurbalya (Weakness): Table no.3

Statistical Analysis for relief from <i>Daurbalya</i>						
<i>Daurbalya</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	1.067	0.143	7.443	<0.001	Highly Significant	53.33%

Interpretation:

The table shows the statistical analysis for relief from *Daurbalya* in *Pandu Roga*, where t-score shows the difference is

highly significant. It means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Daurbalya*.

Gatrashula : (Body-ache) Table no.4

Statistical Analysis for relief from <i>Gatrashool</i>						
<i>Gatrashool</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	1.000	0.136	7.374	<0.001	Highly Significant	60.00%

Interpretation:

The table shows the statistical analysis for relief from *Gatrashool* in *Pandu Roga*, where t-score shows the difference is highly significant. It means that the said formulation used in *Pandu roga* is effective to settle the symptom of *Gatrashool*.

Jwara: (Fever)

The table shows the statistical analysis for relief from *Jwara* in *Pandu Roga*, where t-score shows the difference is highly significant. It means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Jwara*.

Table no. 5

Statistical Analysis for relief from <i>Jwara</i>						
<i>Jwara</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	0.600	0.103	5.835	<0.001	Highly Significant	94.74%

***Nidraluta* : (Excessive sleep) Table no.6**

Statistical Analysis for relief from <i>Nidraluta</i>						
<i>Nidraluta</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	0.900	0.121	7.449	<0.001	Highly Significant	75.00%

Interpretation: The table shows the statistical analysis for relief from *Nidraluta* in *Pandu Roga*, where t-score shows the difference is highly significant. It means that

the said formulation used in *Pandu Roga* is effective to settle the symptom of *Nidraluta*.
Arohanasya Aayas Vishesh Shwasa:
(Dyspnea on exertion)

Table no.7

Statistical Analysis for relief from <i>Arohanasya Aayas Vishesh Shwasa</i>						
<i>Arohanasya Aayas Vishesh Shwas</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	0.900	0.139	6.496	<0.001	Highly Significant	55.10%

Interpretation: The table shows the statistical analysis for relief from *Arohanasya Aayas Vishesh Shwas* in *Pandu roga*, where t-score shows the difference is highly significant. It means that

the said formulation used in *Pandu roga* is effective to settle the symptom of *Arohanasya Aayas Vishesh Shwasa*.

***Agnimandya* Table No.8**

Statistical Analysis for relief from <i>Agnimandya</i>						
<i>Agnimandya</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	1.133	0.093	12.234	<0.001	Highly Significant	79.07%

Interpretation: The table shows the statistical analysis for relief from *Agnimandya* in *Pandu Roga*, where t-score shows the difference is highly significant. It

means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Agnimandya*.

***Akshikutashotha* (Swelling at intraorbital region) Table no.9**

Statistical Analysis for relief from Akshikutashotha

<i>Akshikutashotha</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	0.500	0.115	4.349	<0.001	Highly Significant	62.50%

Interpretation: The table shows the statistical analysis for relief from *Akshikutashotha* in *Pandu Roga*, where t-score shows the difference is highly significant. It means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Akshikutashotha*.

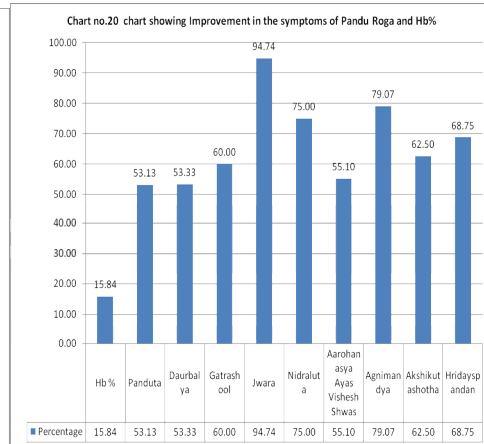
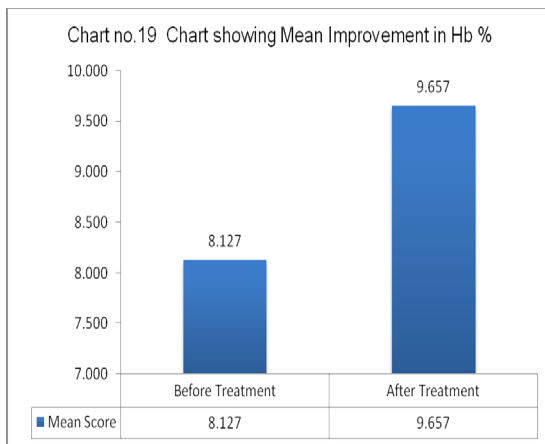
Hriday Spandana : (Palpitation) Table no.10

Statistical Analysis for relief from Hriday Spandana

<i>Hriday Spandana</i>	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	0.733	0.095	7.712	<0.001	Highly Significant	68.75%

Interpretation: The table shows the statistical analysis for relief from *Hriday Spandana* in *Pandu Roga*, where t-score shows the difference is highly significant. It means that the said formulation used in *Pandu Roga* is effective to settle the symptom of *Hriday Spandana*.

Hemoglobin



Statistical Analysis for relief from Hemoglobin

Hemoglobin	Mean of Differences	S.E.	Calculated Value	Probability	Significance	% Improvement
	1.53	0.190	8.040	<0.001	Highly Significant	15.84%

Interpretation: The table shows the statistical analysis for improvement in Hemoglobin % in *Pandu Roga*, where t-score shows the difference is highly significant. It means that the said

formulation used in *Pandu Roga* is effective to improve the Hemoglobin %.

DISCUSSION:

The most important presenting sign of *Pandu roga* is *Panduta* or Pallor where lustre of the skin is lost. It is also the property of *Oja* as more and more *Ojakshaya*, *Raktakshaya* and *Pitta prakopa* occurs in the patients and *Hatprabha* or *Panduta* appears. *Amalaki*, being *Amla rasa pradhan* is a *swayonivardhan dravya* of *Rakta dhatu*, which increases quality and quantity of *Rakta dhatu*. Regarding *Durbalata*, Result may be attributed to *shamana* of *Pitta Dosha* by *Amalaki churna* greater extent and also due to *Rasayana* properties which are necessity for *Dhatukshayaja vikaras* which removes *Dhatu Shaithilya*

In present study mostly Microcytic Anemia was found, sizes of RBCs were smaller than the normal. And in IDA is type of Microcytic Anemia.

In Anemia Iron deficiency is the most commonly found and main cause of Iron deficiency is improper Iron absorption in the gastrointestinal tract.

- Regarding the trial drug, *Amalaki* which is *Rasayan*, *Vayasthapana*, *Virechanopaga*, *Deepana*, *Pachana*, *Tridosahara* especially *Pittashamaka dravya* acts on *Dhatu Shithilata*.⁶ Hence improvement in metabolism, ultimately leads to proper *Dhatu poshana*.

- *Amalaki* 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 enhances iron absorption. Vitamin C taken in divided doses with each meal increase iron absorption to a greater extent.

CONCLUSION:

Iron Deficiency Anemia can be effectively compared with *Pandu roga* on the grounds of its similar signs and symptoms. *Amalaki churna*, when given with honey which is best *Rasayana*. 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 *Amalaki churna with honey*, which contains mainly *Amalaki* helps to develop that media which can improve 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*).

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