

Clinical Evaluation of Dahanadi Choorna in Panduroga**Dr. Priyanka Shrikishan Bhutada¹, Dr. Rajan B. Kulkarni², Dr. Eknath G. Kulkarni³**¹ PG Scholar, Kayachikitsa Dept. A.S.S Ayurved Mahavidyalaya, Nashik.²HOD and Prof. Kayachikitsa Dept, A.S.S Ayurved Mahavidyalaya, Nashik.³Asso. Prof Kayachikitsa Dept, A.S.S Ayurved Mahavidyalaya, Nashik.E-Mail: priyankabhutda9@gmail.comE-Mail: vaidyarajankulkarni@yahoo.com**Abstract**

Today, rising evidence and prevalence of anemia is global public health problem that can occur at all stages of life cycle. 25 % of total world population i.e. 1.62 billion people has affected by anaemia. In Ayurveda, it can be correlated with *Panduroga*. Because of this increasing incidence, it has becoming a burning challenge for Ayurvedic scholars to search for an additional effective management of diseases. The study was aimed to evaluating the efficacy of Dahanadi Choorna in *Panduroga*. A total 60 no of patients of *Panduroga* were selected and divided in to two groups. Group A (study group) patients were treated with *Dahanadi Choorna*, while group B (control group) patents were treated with *Amalkai Choorna* for 21 days. Asseement was done on the basis of sign & symptoms of *Panduroga* and objective criteria. After evaluating the total effects of the treatment, it was observed that, In reduction of *Hritspanda*, *Aarohan ayas*, *Ubahy pad pindikodweshtan* and *Daurbalya*, *Dahanadi Choorna* is better than *Amalkai Choorna* and it have slightly significant action on CBC and pulse rate level. *Dahanadi Choorna* has marked improvement (50-75%) than *Amalaki Choorna* in reducing symptoms of *Panduroga*.

Keywords: Panduroga, Dahanadi Choorna, Amalki Choorna.**Introduction**

Ayurveda is an ancient Indian medical science. The main goal of this Ayurveda medical science is, to defend the human beings from several diseases following by rules & regulations of *Swasthavritta* & to have disease free human beings to have healthy humanity. Further, the green vegetables available in the market are grown under high concentration of fertilizers, just to raise the yield of vegetation. Because of this, percentage of nutritional constituents (i.e. carbohydrate, protein, vitamins & minerals) reduced upto greater extent. All the above conditions, contribute to the undernourished status in all higher, middle & lower economic classes. On the other hand, around 36.7% of the populations are below the poverty line in our country. All these aspects contribute & in turn lead to create very common disease “*Pandu*”. In *Pandu*, skin becomes pale i.e. *nisteja* like “*ketakipushpa*”. In *Panduroga*, *rasa* and *rakta* mainly affected. *Charak* said that, body is formed by *panchabhautik ahara* and diseases occur due to stale food. Our Body is formed by seven dhatus. *Rasa dhatu* nourishes and generates further *dhatus*. *Panduroga* is *pitta pradhan tridosha vyadhi*. It is *rasapradoshaj vikara* and *rakta dhatu kshaya* is the common symptom according to *Charak*. Therefore, the disease is known as “*Panduroga*”. *Panduroga* is termed as anaemia in modern medicine. Anemia is defined as, low level of concentration of haemoglobin in blood.

While describing the treatment of *Pandu*, *Aacharya Vangasena* has especially mentioned that the *Dahanadi Choorna* has capability to treat *Pandu*.

AIM: Clinical evaluation of *Dahanadi Choorna* in *Panduroga*.

Objectives: To reduce the symptoms of *Panduroga* such as; *Hritspanda*, *Aarohan Ayas*, *Ubhay pad pindikodweshtan*, *Pandurta* and *Daurbalya*.

Materials & Methods

• Materials of study

A) Patients

B) Ingredients

• For study group – *Dahanadi Choorna*

A) Dahandi Choorna

Sr no.	Drug	Latin name
1	<i>Chitrak</i>	<i>Plumbago zuelanica</i>
2	<i>Ajmoda</i>	<i>Carum roxburghianum</i>
3	<i>Sunthi</i>	<i>Zinziber officinale</i>
4	<i>Marich</i>	<i>Piper nigrum</i>
5	<i>Saindhav</i>	

For control group

Aamalki Choorna: *Aamalki* (*Emblica officinalis*).

• Methodology

Method

I) Dahandi Choorna

*Choorna*⁴ was prepared as per *Sharangdhar Samhita* guidance of experts from the department of *Rasashastra Bhaishajya kalpana*. *Dahanadi choorna* was standardized in research lab.

II) Amalaki Choorna

Amalaki Choorna from the market used to give patients.

Selection Criteria:

60 Patients from the OPD and IPD of *Kayachikitsa* Department of *Arogyashala Rughalaya*, *Nashik* were randomly selected according to following inclusion and exclusion criteria.

Inclusion Criteria

- Age - 18-60 years of both sexes male and female.
- Classical signs and symptoms of *Panduroga* {*Hritspanda* (Palpitation), *Daurbalya* (generalized weakness), *Arohan Ayas* (dyspnoea on exertion), *Pindikodweshtan* (muscle cramp), *Pandurata* (pallor) }
- Hb - 6-9 gm%
- Class – It includes all socio-economic classes.

Exclusion Criteria

- Haemophilia
- PR bleeding
- During ANC
- Anemia associated with TB, Malignancy, Acquired immune deficiency syndrome, bleeding disorders, liver and renal diseases and carcinoma, aplastic anaemia, pernicious anaemia, thalassemia, megaloblastic anaemia, leukemia, sickle cell anaemia, sideroblastic anaemia.
- Patient below 18 years and patient above 60 years.
- Hb less than 6 gm%

Investigations

- CBC

Before treatment(D0)	After treatment(D21)

Clinical Study

Clinical study carried out on randomly selected 60 patients showing signs and symptoms of *Panduroga*. They were randomly divided into two groups-Group A and Group B. In **Group A (Experimental Group)** 30 patients were treated with *Dahanadi Choorna* While **Group B (Control Group)** 30 patients were treated with *Amalaki Choorna* 5gm BD, for 21 days. Follow up after every 7 days was taken.

Group A (experimental group)

Randomly selected 30 Patients were treated with “*Dahanadi Choorna*”.

1. Route of administration – Oral
2. *Kala: Vyan-udan*
3. *Anupana: Takra*
4. *Matra: 10 gram / twice in a day*
5. Duration: 21 days
6. Follow up: D₀ D₇ D₁₄ D₂₁

It is described in *Vangasena samhita* that the ‘*Dahanadi Choorna*’ was given to the patient for 7 days, but by considering the present situation and chronicity of disease, duration extended upto 21 days in this study.

GROUP B (Control Group)

Randomly selected 30 Patients were treated with “*Amalaki Choorna*”.

1. Route of administration - Oral
2. *Kala: Madhya bhakta.*
3. *Anupana: Madhu*
4. *Matra: 10 gm twice in a day*
5. Duration: 21 days
6. Follow up: D₀ D₇ D₁₄ D₂₁

Follow up: Day 1st, 7th, 14th and day21.

Clinical parameters for assessment of results

Subjective criteria

1. Hritspanda (Palpitation)

Score	Grade	Feature
0	0	No Palpitation
1	+	Palpitation after heavy work
2	++	Palpitation after routine work
3	+++	Palpitation at rest

2. Daurbalya (generalized weakness)

Score	Grade	Feature
0	0	No <i>daurbalya</i> seen even after heavy work
1	+	After heavy work
2	++	During routine work
3	+++	During rest

3. Aarohan Ayas (dyspnoea on exertion)

Score	Grade	Feature
0	0	No breathlessness even after heavy work
1	+	Breathlessness after heavy work
2	++	Breathlessness after routine work
3	+++	Always breathlessness even at rest

4. Pandurata (pallor)

Score	Grade	Feature
0	0	No pallor
1	+	Pallor over conjunctiva
2	++	Pallor over conjunctiva and skin
3	+++	Pallor over conjunctiva, skin and palm

5. Ubhay pad pindikodweshtan (pain at calf muscle)

Score	Grade	Feature
0	0	Absence of symptoms
1	+	Pain after walking and reduces at rest
2	++	Patient having continuous pain but can bear
3	+++	Patient having continuous and unbearable pain

Objective Parameters

1. CBC

Before treatment(D0)	After treatment(D21)

2. Pulse rate

Before treatment(D0)	After treatment(D21)

Observation and Results

Out of 60 patients maximum cases were females (66.67%) and (33.33%) were males, age group of 51-60 years (36.67%). Majority of patients were married (86.67%), most of cases from low socio-economic group (48.34%). Most of patients having vegetarian diet (61.67%).most of patients having habit of tea (53.33%). Most of patients were housewives (35%) and most of cases were having *pitta kapha prakruti* (21.67%).

'Chi' square test was applied for the analysis of qualitative data and paired and unpaired-'t' tests were applied for the analysis of quantitative data.

1) Hritspanda

Days	χ^2	Df	Table χ^2 value	probability	Result
D7	0.74	1	3.84	>0.05	Not Significant
D14	9.092	2	5.99	<0.05	Significant
D21	12.44	2	5.99	<0.05	Significant

2) Aarohan ayas

Days	χ^2	Df	Table χ^2 value	probability	Result
D7	6.33	2	5.99	> 0.05	Significant
D14	9.98	2	5.99	> 0.05	Significant
D28	14	2	5.99	< 0.05	Significant

3) Ubhay pad pindikodweshan

Days	χ^2	Df	Table χ^2 value	probability	Result
D7	5.432	2	5.99	> 0.05	Not Significant
D14	4.592	1	3.84	< 0.05	Significant
D21	15	2	5.99	< 0.05	Significant

4) Pandurta

Days	χ^2	Df	Table χ^2 value	probability	Result
D7	3.67	2	5.99	> 0.05	Not significant
D14	7.296	2	5.99	< 0.05	Significant
D21	3.288	2	5.99	> 0.05	Not significant

5) Daurbalya

Days	χ^2	Df	Table χ^2 value	probability	Result
D7	15.62	2	5.99	< 0.05	Significant
D14	7.18	2	5.99	< 0.05	Significant
D28	8.43	2	5.99	< 0.05	Significant

Paired 't' test

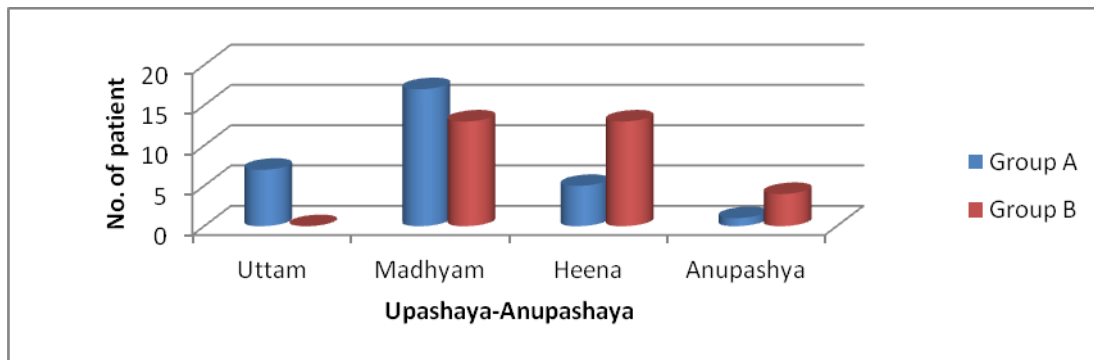
	Hb level		MCV level		MCHC level		Pulse rate level	
	Group A	Group B	Group A	Group B	Group A	Group B	Group A	Group B
Mean	0.17	0.07	3	1.2	1.5	0.7	4	1.2
SD	0.177	0.136	3.285	3.252	1.525	1.337	4.2	3.99
SE	0.032	0.0248	0.6	0.594	0.278	0.244	0.76	0.72
t 29	5.3125	2.82	5	2.020	5.395	2.868	5.26	1.66
t-table	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
P	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Unpaired t – test

	Hb level	MCV level	MCHC level	Pulse rate level
SD	0.158	3.268	1.066	4.1
SE	0.006	0.843	0.275	1.05
t 58	2.5	2.135	2.9090	2.66
t table	2.02	2.02	2.02	2.02
P	<0.05	<0.05	<0.05	<0.05

Total effect of therapy

Distribution of patient according to total effect of therapy:



Relief	Upashay-anupashay	Group A	Group B
75% and above	Uttam	23.33%	0%
50% to < 75%	Madhyam	56.67%	43.33%

25% to < 50%	Heena	16.67%	43.33%
0% to < 25%	Anupashay	3.33%	13.34%
	Total	100	100

Discussion

The study was aimed at evaluating the efficacy of *Dahanadi Choorna* in *Panduroga* which is assessed by the reduction in symptoms *Hritspnda*, *Aarohan ayas*, *Ubhay pad pindikodweshtan*, *Pandurta* and *Daurbalya* and by the change in the CBC level and pulse rate level. All the patients of study group and control group showed improvement in signs and symptoms of *Panduroga*. Statistical analysis of the efficacies of study drug *Dahanadi Choorna* and Control drug *Amalaki Choorna* in *Panduroga* was done by applying 'Chi' Square test and 't' test.

To compared the efficacy of *Dahanadi Choorna* with that of *Amalaki Choorna* the qualitative data subjected to χ^2 test.

There was slightly significant difference in *Hritspanda* (palpitation) at day 7. But, from day 14 there was more significant difference in experimental group. There was slightly significant difference observed in *Aarohan ayas* on day 7 and day 14. But on day 21, there was highly significant difference in experimental group. There was no significant difference observed in *Ubhay pad pindikodweshtan* on day 7. But on day 21, the difference is highly significant in experimental group. There was highly significant difference in *Daurbalya* (Generalized weakness) from day 7 more in study group. There was no significant difference observed in *Pandurta* at day 7 & at day 21 observed in experimental group and control group.

The observed "t" value for difference in pulse rate & Hb% on day 21 is slightly significant. It suggests that, the values of these objective criteria's was significantly deranged due to treatment in comparison with group A & group B (i.e. paired t test). After studying all the data thoroughly it was observed that out of 30 patients in trial group 17 (56.66 %) received *madhyam upashaya* and 7 (23.33%) received *utaam upashaya* & 5 (16.66%) received *heena upashaya*.

Where as in control group only 0% patient got Uttam Upashaya, 13 (43.33%) patients got Madhyam Upashaya, 13 (43.33%) patients received Heena Upashaya and 4 (13.33%) had anupashaya.

Probable mode of action of *Dahanadi Choorna*

Chitrak, *Ajmoda*, *Marich* & *Sunthi* due to its *katu rasa* & *katu vipaka*, act as *Agnideepak* & *Aamanashak* & relieves *srotorodha*. Therefore, Patients experienced improvement in appetite which the first sign while treating the patients of *Panduroga*. *Sunthi*, *Takra*, *Saidhav* has first main action on *Rasadhatu*. *Panduroga* is the *rasapradoshaj vikara*. For the treatment of *Panduroga*, it must to correct *rasadushti*. *Sunthi* and *Marich* have action on *rakta dhatu*. *Saindhav* balances *pitta*. Due to which, normal physiology of *doshas* get maintained i.e. *ranjakpitta vaigunyajanit vikruti* has been removed. *Sunthi* due to its *Madhur vipaka* acts on *Rasadhatu*. *Rasa dhatwagni vardhan* causes *uttrottar Dhatu* nourishment. Property of *Takra* is *hridya* and *srotovishodhak* which improves *sadhak pitta dushti*. Therefore, the *samprapti* of *Panduroga* got hampered.

According to modern science

Chitrak acts as an appetizer, digestive but astringent. It is useful in anorexia, indigestion. It enhances circulation of gastric mucosa membrane, helps in digestion & absorption. *Ajmoda* acts as cardiac stimulant. It is carminative, appetizer, analgesic. It is used in body ache. *Sunthi* purifies blood. Active constituents' gingerol & shagol are known to cause vagal

stimulation, results in decrease in blood pressure & heart rate. It is an excellent appetizer, digestive. *Marich* is a stimulant to circulatory system. It is a liver stimulant and other digestive juices are also released. Organic acids promote iron absorption. Buttermilk is also organic acid. Thus, butter milk is simple, easily available organic acid which aids in iron absorption and there by aids in treatment of anaemia. Butter milk even contains vitamin B12, which also has a crucial role in erythropoiesis. Vitamin B12 is required by erythroblasts for proliferation during their differentiation.

These all properties were proved in the study shows, the decrease in symptoms like *Hritspanda* (palpitation), *Aarohan Ayas* (Dyspnoea on exertion), *Ubhay pad pindikodweshtan* (pain at muscle cramps), *daurbalya* (generalized weakness) and improvement in CBC & pulse rate.

There was no side effect observed in the patients taking *Dahanadi choorna*. Digestive power was improved. In some patients, symptoms like *Malavashtambha* (Constipation) were relived. So, *Dahanadi Choorna* is useful for maintenance of general health.

Conclusions

Following conclusions were drawn from the clinical trials conducted under study 'Clinical evaluation of *Dahanadi Choorna* in *Panduroga*. On the basis of statistical tests of significance, *Dahanadi Choorna* and *Amalaki Choorna* are effective in reducing the symptoms like *Hritspanda* (Palpitation), *Aarohan Ayas* (dyspnoea on exertion), *Ubahy pad pindikodweshtan* (pain at muscle cramps), *Daurbalya* (Generalized weakness) & *Panduroga* (Pallor) of the disease *Panduroga*. But, *Dahanadi Choorna* is better than *Amalaki Choorna* in reducing *Hritspanda*, *Aarohan ayas*, *Ubhay pad pindikodweshtan* & *Daurbalya*. All drugs in *Dahanadi choorna* cause *deepan* & *pachan*. It is *balya* for *uttarottar dhatu* nourishment. Drugs having the properties like *deepan*, *pachana*, *balya* and *rasayan* are useful in the treatment of *Pandu*. However, *Dahanadi Choorna* having slightly significant action on Pulse rate, Haemoglobin level, MCV level, MCHC level. Thus, it can be concluded that, *Dahanadi Choorna* is more effective than *Amalaki Choorna* in the management of *Panduroga*.

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