



COMPARATIVE CLINICAL STUDY OF KASIS BHASMA AND PHALTRIKADI KWATH ON PANDU ROGA

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Article Received on
24 Dec. 2021,

Revised on 14 January 2022,
Accepted on 04 Feb. 2022

DOI: 10.20959/wjpps20223-21355

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ABSTRACT

Kasis Bhasma and Phaltrikadi Kwath are the two famous ayurvedic preparation that are described in ayurvedic classics for the management in panduroga (Anemia). A simple random sampling method was followed for the clinical study. The 60 anaemia Patients age group between 18 to 60 years divided into two group- Group A (n=30) and Group B (n=30) were treated with Kaisi Bhasma and Kasis bhasma anupan Phaltrikadi kwath respectively. Both drugs provided significant effect on the signs and symptoms of shrama (fatigue), daurbalya (weakness), hrudrava (palpitation), shwasa (exertional dyspnoea),

aruchi (anorexia), Kati paad shool (pain in back and lower limbs). Kasis bhasma provided significant result on Hb gm. %, RBC, MCV, PCV serum iron and TIBC. Kasis bhasma anupan Phaltrikadi kwath provided significant result on Hb gm%.RBC, PCV, MCV, MCH, serum iron, percent transferrin saturation and TIBC.

KEYWORDS: Kasis Bhasma, Phaltrikadi Kwath, Anemia, Pandu roga.

1) INTRODUCTION

A) Need of the study

Rasashastra is a subject which deals with minerals & metals and its therapeutic effects. The innate qualities like quick action, prolonged shelf life & better palatability to rasa aushadhies have help them to conquer the demand of patients.

A quick symptomatic relief, palatability of dosage form, easy availability etc. are favorable factors. However, multitudes of effect of drugs are taken under consideration.

The scenario has begun to be changed. The Ayurvedic system of medicine is on the way to regain its past glory because of its preventive and curative nature, least side effects and holistic approach. But the need of hour regarding Ayurvedic medicines are standardization, clinical trials and evidence based medicines.

Kasis on Pandu. Later on in some Rasa Granthas like Rasatarangini and Rasamruta, they had successively used Kasis for the treatment of pandu.

Phaltikradikwath Selection of drug as anupan of kasis bhasm. Phaltrikadi kwath is an Ayurvedic herbal formulation quoted in *Bhaishajya Ratnavali* for the treatment of *Pandu roga chikitsa*.

Pandu roga

In Ayurveda, anaemia is explained as *Pandu Roga* which shows clinical features of weakness, fatigue, lassitude, edema, pallor, dry skin, lusterless hair and white sclera. India is one of them and per capita income in India is very low. An average individual lives below the poverty line. The main cause of Anaemia is malnutrition. People's diet is generally deficient in essential minerals, vitamins etc.

2) Review of literature

a) Drugs review

***Kasis:** - “Kandupandukramighansach raktsannjanam param| (ras.tar.21\232)

In ras tarangani there is reference of kasis bhasm, & its use.so that we select kasis for the Pharmacological preparation, standardization & its w. s. r to Pandu roga. Kasis in Pandu. Later on in some Rasa Granthas like Rasatarangini and Rasamruta, they had successively used Kasis for the treatment of pandu.

In this phase of study a critical review of Ayurvedic and modern literature regarding Shodhana, Marana, Kasis, and Pandu Roga has been carried out. Rasamruta, they had successively used Kasis for the treatment of pandu.

***Phaltikradi kwath:-** Selection of drug as anupan of kasis bhasm.

“Anupashat sah va piyate ityanupanam|

Alpdoshamdosham vaanupanen jiryati|| (Astang.hrya.su.8\90)

Phaltrikadi kwath is an Ayurvedic herbal formulation quoted in *Bhaishajya Ratnavali* for the

treatment of *Pandu roga* chikitsa 22/12.

b) Disease review

Pandu roga: Pandu Roga had been mentioned in Rigveda and Atharvaveda by the name of Halima and Harima respectively. This disease was described in ancient Hindu treatise like in Ramayana, Mahabharata etc.

Management of Panduroga by Lauha Churna with Takra was mentioned in Garudapurana.

Acharya Vagbhatt has mentioned this disease as the disease of diseases like '(Pando Shresthamayah).

Clinical features: Hridayaspandana, Raktalpata (Anaemia), Shrama, Karshya, Varnakshaya (Pallor), Twaksphotana, Bhrama (Giddiness), Shwasa (Breathlessness)

3) AIMS AND OBJECTIVES

- 1) Pharmaceutical preparation of of kasis bhasm.
- 2) Pharmaceutical preparation of phaltrikadi kwath.
- 3) Standardization of kasis bhasm.
- 4) Standardization of phaltrikadi kwath.
- 5) Evolution of the kasis bhasm & phaltrikadi kwath as its anupan along with w.s.r. to its effect on pandu rog.

4) MATERIALS AND METHODS

1. Source of data

A. Subject:- Patients suffering from pandu roga will be selected from outpatient department of shubhdeep ayurved medical collage & hospital datoda, Indore. After fulfilling the inclusion and exclusion criteria.

B. Therepy:- Drugs

1. Kasis: The kasis has purchased from market.

Kasis shodhan: - Shodhana of Kasis by Bhavana method, it is described in Rasamrita 3/158 that in Kasis, Shodhana Bhavana of Bhringaraja Swarasa is given thrice.

Kasis maran: - For the maran of kasis method described in Rasatarangini 21/255-258. Kasis should be triturated with Kanji 7 times. Then prepare its pellets (Chakrika), than dry it. Close

these in sarava samputa and apply puta heat 10 kg vanyopalas. After that found Kasis triturated with lemon juice then prepare its pellets (Chakrika), than dry it. Close these in sarava samputa and apply puta heat 10 kg vanyopalas. Repeat the puta heating till its bhasma become free from sour taste & develops red color like Gairika.

Dose of Kasis Bhasma: - 65 mg – 250 mg Rasatarangini

125 mg – 250 mg Rasamrit, Dravya Guna Vigyana

125 mg – 375 mg Rasatantra Sara

Anupana: as anupan of kasis bhasm we used the phaltikradi kwath.

Dose 20 ml of kwath with 20 ml water, after meal.

2. Phaltrikadikwath*

Drugs:- 1)Haritaki: 2)Vibhitaki 3)Amalaki 4)Guduchi 5)Adusa 6)Chirayta 7)Kutki 8)Neem chhal 9)Madhu

1. Procedure: - Take all the drugs in equal amount, & make it 2 tola, then added with 32 tola of water. Boil it when it is around 8 tola left, Stop boiling.

Dose & Use: - 20 ml of kwath add with madhu. After lunch & dinner.

2. Physio-chemicle properties:- In pharmaceutical study, the main aim is to develop S.O.P. (Standard Operative Procedure) for the preparation of Kasis Bhasma & Phaltrikadi kwath.

Aims of pharmaceutical process

- 1) Kasis Shodhana (Rasamruta 3/158)
- 2) Marana of Kasis (Rasatarangini 21/255-258)
- 3) Preparation of Phaltrikadi kwath (Bheshajya ratnavali 22\12)

Physical characteristic of kasis

Color: Whitish green lusterous

Odour: Nil

Texture: Crystalline

Practical: Preparation of bhringaraja Swarasa

Material: Bhringaraja panchanga

Apparatus: Mixer machine, knife, spatula, steel vessel, cotton cloth, measuring glass, weight balance etc.

- Evaluation on classical analytical parameter.

Organoleptic characters: - Varna, Rekhapurnatva, Varitara Slakshanatva, Gatarasatva

- Evaluation on modern analytical parameters: - pH, Loss on drying, Ash value, Acid insoluble ash, Qualitative test for iron.

5) Plan of study (Study design): It will be open type of study. Group A – Kasis Bhasma (125) mg with anupan of Phaltrikadi kwath 20ml – B.I.D. after food for 60 days with. Group B -- Kasis Bhasma with luck warm water (125) mg B.I.D. in the form of Capsule, after food for 60 days.

Criteria for selection of patients

1. The patients having classical symptomatology of Pandu roga.
2. Age groups of patients were in between 12 years to 60 years.
3. A special detail clinical proforma has been prepared incorporating selected symptoms and signs like "Hridayaspandana (palpitation) Shrama (fatigueless), Shwasa (breathlessness), Daurbalya (weakness) and Panduta (pallor).detail history has been taken and complete physical examination has been carried out.

Laboratory investigations like blood for complete haemogram, serum iron and TIBC (total iron binding capacity) were carried out and a level of the parameters was fixed for diagnosis of patients as

- Hemoglobin percentage: Below 10 g/dl
- Serum iron (SI): Below 35 g/dl
- Total iron binding capacity (TIBC) : More than 400 g/dl

Criteria for Exclusion of Patients:

- Hemoglobin percentage : Below 6 g/dl
- Pregnant and lactating women
- Iron deficiency anaemia (Pandu roga) with cardiac complication, diabetes mellitus and malignancy.

Dose of medicine

- Group A – Kasis Bhasma (125) mg with anupan of Phaltrikadi kwath 20ml – B.I.D. after food for 60 days with.
- Group B -- Kasis Bhasma with luck warm water (125) mg B.I.D. in the form of Capsule, after food for 60 days.

- In ayurveda the vehicle is very important for success of the therapy.
- Follow-up period: After completion of each 15 days.

Criteria for Assessment: a) The result was assessed on relief of the signs and symptoms of the disease. b) Biochemical and hematological parameters after completion of the treatment.

Aruchi (Sense of taste affected), Daurbalaya (Weakness), Shrama (Fatigueless), Kati paad shool (Pain in back & lower limbs) Swasha (Dyspnea), hridayen dravta (Palpitation)

Grading score (Assessment criteria)

NIL-0, MILD-1, MODERATE-2, SEVERE-3

INVESTIGATIONS: B. (OBJECTIVE PARAMETER):-

Hb %, C.B.C, SERUM IRON (S.I), TOTAL IRON BINDING CAPACITY

Assessment of Results: The paired “t-test” were carried out for signs & symptoms, investigations & comparison between two groups. Overall effect on signs & symptoms were calculated by percentage of relief.

6) OBSERVATION AND RESULTS

- Maximum numbers of patients were obtained in the age group of 20 – 30 years, i.e 66%. In the age group of 30 – 40 years 25% of patients were obtained.
- Females were found 93.33%.
- Maximum numbers of patients were labour class (48.33%), House wives were 26.66%, and Students were 21.66%.
61.66 % of patients belong to Lower class, 20 % patients were in Middle class.
- Vegetarians were 65%, Non-vegetarians were 35%.
- 55% of patients were married, 45% were un-married.
- 36.66% Patients were based urban area, 63.33 % patients were based in rural area.

Most of the patients suffering from *Pandu roga* have *Mandagni* 48.33%, 28.33 patients have *Sama Agni*, 23.33 patients having *Visham Agni*.

53.33% patients suffering from any Mental Stress, 46.66 % of patients not suffering from Mental stress.

Group A: Provided highly significant effect in relieving

1. In *Aruchi* the percentage of relief: 74.54%

2. In *Daurbalaya* the percentage of relief: 64.93%
3. In *Shrama* the percentage of relief: 60.60%
4. In *Kati paad shool* the percentage of relief: 66.095%
5. In *swasha* the percentage of relief: 66.12%
6. In *Hridayen dravta* the percentage of relief: 62.50%

Group B: Showed highly significant effect in relieving

1. In *Aruchi* the percentage of relief: 65.78 %
2. In *Daurbalaya* the percentage of relief: 50.61%
3. In *Shrama* the percentage of relief: 52.30%
4. In *Kati paad shool* the percentage of relief: 57.14%
5. In *Swasha* the percentage of relief: 61.66%
6. In *Hridayen dravta* the percentage of relief: 52%

Effect of hemoglobin

Group A- Increase Hb% by about 37.73 % in 2 month. After medication when these values were analyzed statistically the scores were highly significant with P.

Group B- Increase Hb% by about 23.98 % in 2 month. After medication when these values were analyzed statistically the scores were highly significant with P.

7) DISCUSSION

Anaemia has become the large problem to the nation. It has been noted that this disease along with its complication is a major cause of mortality and morbidity not only India, but also in the developed countries. According to world health report 2002 of W.H.O., iron deficiency is one of the diseases among the top ten selected risks to the health. So, *Pandu Roga* i.e. ANAEMIA has been selected for the clinical trial.

- *Acharyas* have mentioned the involvement of *rakta dushti* or *raktasrava* for the manifestation of *Pandu roga*. Even in iron deficiency ANAEMIA, pathology lies in the blood or at the site of production of cells due to various factors responsible for its production.

In the contemporary science, it has been proved that liver has a significant role in the formation and maturation of RBC, and gastric juice helps in formation of anti-anaemic factor. *Vata* especially *vyana vata* carries the *dosa* to the *twak* and displaces it between *twak* and *mamsa*. *Kapha* as well as *ojo kshaya* occur due to *rukshata* and *teekshnata* of *vata* and *pitta*

respectively. *Rasa* and *raktha vaha srotus* get involved and *sroto dusti prakara* is *sangha* so the nutritive part does not reach the subsequent *dhathus* and there is *alpata* of *raktha* and *medhas*. The main function of hemoglobin is to transport oxygen from lungs to the tissues. Anaemia, by reducing the oxygen capacity of the blood reduces amount of oxygen available to the tissue resulting in tissue hypoxia. The hypoxia causes impairment of functions of body tissue and symptoms and signs of anaemia are there for referred to many system. The degree and functional impairment of individual tissue depends largely on their normal oxygen requirement.

Improper diet and dietic regime in the form of excessive intake of *amla*, *lavana*, *katu* and *kshara* which are *pitta prakopaka*, *rakta dushtikaraka* and *ojo kshayakaraka* and the intake of specific food materials like *pinyaka*, *amisha*, *paya*, *tilapishtaa* will however vitiate the *rakta dhatu* and produces *Pandu*. These types of food materials hamper the normal process of absorption and assimilation. In the contemporary science, it is a proven fact that intake of unwholesome diet, both quantitatively and qualitatively will produce sequential changes in the process of digestion and absorption.

Anaemia in Indian girls is predicated by both biology and socio-economic factors, i.e., unique confluence of biology, culture (diet, marriage age), and great variation in relative affluence and education.

Early marriage ---> early initiation of sexual activity ---> repeated early child bearing ---> recurrent iron loss. This emerges as a major reason for anaemia.

Among indian girls

Thus, large part of anaemia in Indian girls ensues from exacerbation of their inherently greater risk of iron loss attendant to their biology, i.e., pregnancy, child birth and breast feeding. Such exacerbation is cultural, i.e., tendency for early marriages and child births, as well as dietary, i.e., inadequate iron intake and inefficient absorption.

- Dietary iron is available in two forms, haem or non-haem.
- Haem form of dietary iron is commonly available in meat with the non-haem form in plant foods.
- Haem iron is much better absorbed so already we arrive at a partial answer to the question.
- 90 to 95% of total daily dietary iron in Indian diets is non-haem iron.
- Vegetarian diet iron bioavailability is 10% compared to 18% in omnivorous diets.

- This means Indian diets are richer in the less efficiently absorbed non-haem iron.
- To compensate for this lower efficiency, nutritionists recommend increasing dietary iron intake by 80%.
- Adding another wrinkle, adequate dietary iron levels does not in and of itself explain India's anaemia prevalence since Gujarat with ~23mg/day iron intake still has 55% anaemia prevalence compared to Kerala's much lower 33% with just 11mg/day iron intake.

The mental health always contributes for the physical well-being.

A healthy mental composure is needed as it indirectly influences to bring up physical health. A proper diet taken will not undergo digestion if the mind is influenced by *chinta*, *shoka*, *krodha* and other disturbances, which will hamper both the *jataragni* and *dhatwagni*. In present era, the studies have shown that anxiety, stress, nervousness and mental disturbances reflect on body mechanism and impair the outcome of body functions.

Pandu can also manifest as secondary to some other disease like *raktasrava*, *jeernajwara*, *raktarshas*. Chronic and acute blood loss can lead to anaemia.

Being the student of *Rasashastra* emphasis has been given to work on some *bhasma* preparations, because *Bhasmas* are the basic and unique preparation of *Rasashastra*. They are subjected to *Samskara* like *Shodhana*, *Marana* etc. During processing and having excellent therapeutic potency, *Kasis Bhasma* and *Phaltrikadi kwatha* is the most widely used in *Pandu Roga*.

So certain a study of *Kasis Bhasma* and *phaltrikadi kwatha* has been selected and emphasis has been given to establish a standard operating procedure for preparation of these *Bhasma* and also to assess the therapeutic effectiveness of the *Bhasma* and *kwatha* on *Pandu Roga*.

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