

THE FUNCTIONAL UTILITY OF SROTOMOOLA CHIKITSA IN PURVIEW OF PANDU ROGA- A CLINICAL STUDY

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ABSTRACT

Background: The complete cognizance of utility of *srotomoola* (root) of *srotasa* (channels) has not been expounded in *Samhitas*. Anaemia (~*Pandu*) is most common nutritional disorder prevalent all over the world, affecting about 4-5 billion people i.e. 66-80% of the world's population. *Charak* has elucidated *hridaya* and *rasavaha dhamni* as the *moola* of *rasavaha srotasa*. *Pandu* is one of the diseases of *rasavaha srotasa*. A clinical research was carried out at NIA Jaipur to find out the functional utility of *srotomool*. It was postulated that if we treat the *moola* of a *srotasa* of a particular *dhatu*, without giving medicines acting directly on the disease, even then the *dhatu pradoshaja vikara* of that particular *srotasa* will get treated. **Aims and Objectives:** To establish the role and functional utility of *srotomoola* (*hridaya* and *rasavaha dhamni*) w.s.r. *Rasa dhatu pradoshaja vikara i.e pandu*. **Materials and Methods:** A total number of 30 patients were registered. The patients were randomly allocated into 3 groups. Group A was given drug (*hridaya yoga*) which acted on *hridaya* (*srotomoola*), Group B was given drug (*srotoshodhak yoga*) which acted on *rasavaha dhamni* (*srotomoola*) and Group C was given drug (*panduhara yoga*) that acted directly on the disease. During the selection of drugs given in Group A and group B, care was taken that these drugs were not prescribed directly for the treatment of *Pandu* in *ayurvedic* texts. **Result:** Group A & Group B had statistically extremely significant relief on almost all symptoms of *Pandu* as compared to Group C. **Conclusion:** Combined intervention of *Srotomoola Chikitsa* and *Vyadhi Pratyhanika Chikitsa* can surely enhance the treatment modalities based on Ayurvedic lines in coming years.

Keywords: *Rasa Dhatu Pradoshaja Vikara, Srotasa, Srotomoola, Pandu*

INTRODUCTION

Ayurveda is one of the oldest indian systems of medicine in the world. It has established its position as a unique health care system with a holistic approach to many complex health hazards. The utility of the knowledge of sites of origin (*srotomoola*) of channels (*srotas*) is not directly described in *samhitas*. As a tree is seriously affected by injury to its root, similarly, the channels of circulation in the human

body are seriously affected when their *srotomoola* is injured^[1]. *Srotas* have been given a place of fundamental importance in *ayurveda* both in health and disease. This can be seen when the integrity of *srotas* is impaired, both *sthangata* and *marga gata dhatu* are involved, the vitiation spreads from one *dhatu* (body tissues) to another and all *srotas* are involved simultaneously.^[2] All this whiles nothing much

has been expounded on *srotomoola* as such. As a *rasadhata pradoshaja vikara pandu* is very important disease as it's spreading very speedily due to unhygienic, malnourished condition and under various effects of stress and strain. In India, illiteracy is also a problem, due to which majority of people do not pay attention to their dietary intake. All factors ultimately lead to the deficiency of body tissues (*Dhatu*) mainly blood (*Rakta*) and come up in the form of anemia (~*Pandu*). In *pandu roga* there is qualitative and quantitative reduction of *rakta dhatu* (blood) which leads to *varna vikriti* (color discoloration). *Rakta* is considered a key factor for *jeevana, prinana, dharana* and *poshan* of the body [3]. *Pandu roga* has similarity with anaemia of modern system in all aspects such as etiology, signs, symptoms and therapeutics. [4] The hypothesis of this work was that if we treat the *moola* of a *srotas* of a particular *dhatu*, then the *dhatu pradoshaja vikara* of that particular *dhatu* will automatically get treated. In this way we will be able to establish the role of *srotomoola* in the treatment or pathology of a particular *srotas* or *dhatupradoshaja vikara* of that particular *dhatu*. In this way a scientific basis of connection can be established between *srotas* and *srotomoola*.

Aims and Objectives

- To establish the role and functional utility of *srotomoola* (*hridaya and rasavaha dhamni*) w.s.r. *Rasa dhatu pradoshaja vikara i.e pandu*.

Materials and Methods

Design of the study: Randomized, single blind study

Selection of patients: In the present clinical trial, patients were registered and screened for general observations. The cases were taken from O.P.D/I.P.D. of *arogyashala*, National Institute of Ayurve-

da, Jaipur. A detailed history, evaluation and follow up studies were recorded on a proforma designed especially for the present study.

Ethical considerations: Ethical clearance was obtained from the institutional ethics committee (IEC). Informed consent was obtained from all the patients.

Criteria for Inclusion

- 1- Age - 15 -60 years
- 2- Sex - Both Sexes
- 3- Haemoglobin- 7-11.5gm %
- 4-Patients with typical findings of *Pandu* (subjective parameters like *aruchi daurbalya, hridaya spandana*, were the potential trial subjects.

Criteria for Exclusion

- 1- Patients below 15 and above 60 years of age
- 2- Pregnant ladies
- 3- Patients suffering from diseases AIDS, DM, TB, CA.
- 4- Haemoglobin less than 7gms. %
- 5- Patients suffering from serious diseases such as IHD, CCF

Sampling:

Simple random sampling technique using lottery method was used. Group allocation was done by simple random allocation (complete randomization).

Sample size: 30 patients

Drop outs: 0

Total patients who completed the trial: 30

Grouping:

30 patients under trial were subdivided into three groups i.e. Group A, Group B and Group C (each 10 patients) to compare the effects.

Selection of Drug: Group A was given drug that acted on *Hridaya (srotomoola) Hridaya Yoga as Vrikshamla (Garcinia India)*. [5] Group B was given drug which acted on *Rasavaha dhamni (srotomoola) Srotoshodhak yoga as shadushna*. [6]

Group C was taken under control group and given *Panduhara yoga (Phaltrikadi Ghan Vati)*. The drug is mentioned in treatment of *Pandu* as per classical text of *Bhaishajya Ratnawali*.^[7] During the selec-

tion of drugs given in Group A and Group B, care was taken that these drugs were not prescribed directly for the treatment of *Pandu* in *ayurvedic* texts.

Table No.1 Drugs Administered, Dosage, Time and Duration

Group	Drug Administered	Dose	Anupana	Time of Administration	Duration of Treatment
A	<i>Hridaya yoga: Vriksham-la Churna</i>	5 gm	water	Twice a day.	2 months.
B	<i>Srotoshodhaka yoga : Shadushna Churna</i>	3 gm	water	Twice a day.	2 months.
C	<i>Panduhara yoga: Phal-trikadi ghan vati</i>	500mg	water	Twice a day.	2 months.

Diagnostic Criteria: Subjective Parameters that were assessed before and after the study were as follows:

- *Aruchi* (Loss of appetite)
- *Panduta* (Pallor)
- *Daurbalya* (Weakness).
- *Hridya Spandana* (Palpitation)

- *Shwasa* (Dyspnoea)
- *Pindikodwestana* (Leg Cramps)
- *Akshikuta Shotha* (Periorbital Oedema)
- *Shrama* (Fatigue)

Objective Parameters that were assessed before and after the study were as follows

1. Hb (gms/dl)
2. MCV (fl)
3. Serum Iron level
4. TLC (Th/mm ³)
5. MCHC (g/dl)
6. Total Iron Binding Capacity
7. DLC (%)
8. PBF
9. SGOT (IU/L)
10. ESR (mm/hr)
11. PCV (%)
12. SGPT (IU/L)
13. Serum creatinine (mg/dl)
Clinical Assessment
The patients undergone the treatment were assessed for improvement in specific symptoms of <i>Pandu</i> mentioned above and also the objective parameters.
Statistical Analysis
The information collected on the basis of observation was analyzed using appropriate statistical test (Paired t-test was used for parametric data and Wilcoxon-Rank sum test for Non-Parametric Data and Dunn's multiple comparisons test for comparative analysis) to evaluate

the significances at different levels i.e. at 0.05, 0.01 and 0.001 levels. [8] The obtained results were interpreted as follows-

- Insignificant or Not significant (NS) - $p > 0.05$
- Significant (S) - $p < 0.05$,
- $p < 0.01$,
- Highly Significant (HS) - $p < 0.001$,

Results: Effect of therapy on subjective symptoms: Considering all the subjective symptoms, it was found that significant improvement in relief percentage was there in all the groups, especially in Group C followed by Group B then by Group A. In inter comparisons between all the three

Groups it was found out that all the Groups were statistically insignificant to each other which imply that there is no any much difference in the Groups regarding relieving symptoms of *Pandu Roga* and all the Group drugs showed statistically significant results.

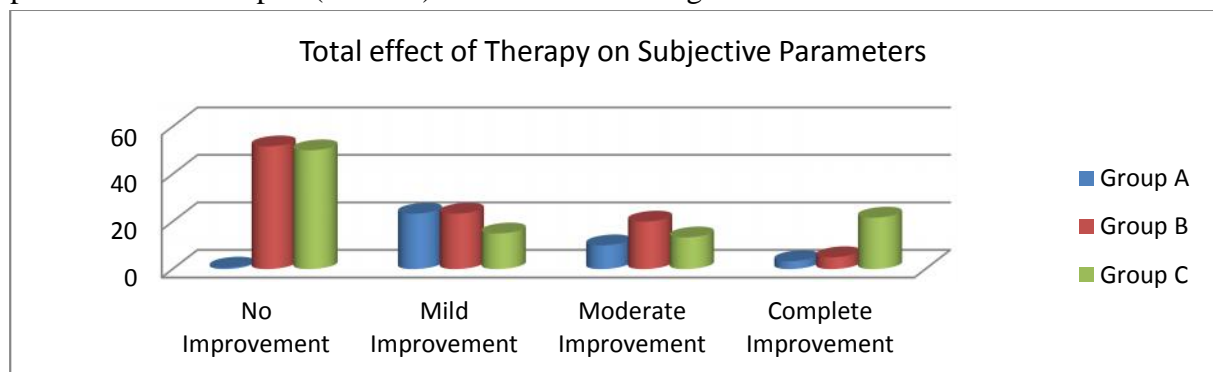
Table 2: Total Effect of Therapy in 30 Patients of Pandu (Subjective Symptoms):

Overall effect of Therapy				
	No Improvement	Mild Improvement	Moderate Improvement	Complete Improvement
Group A	0.63	23.33	10	3.33
Group B	51.66	23.33	20	5
Group C	50	15	13.33	21.66

Subjective symptoms were found to be relieved to the complete improvement in Group C (21.66%), followed by mild improvement in Group B (23.33%) and same

in Group A mild improvement (23.33%) lastly no improvement was seen in Group A (51.66%).

Fig.1



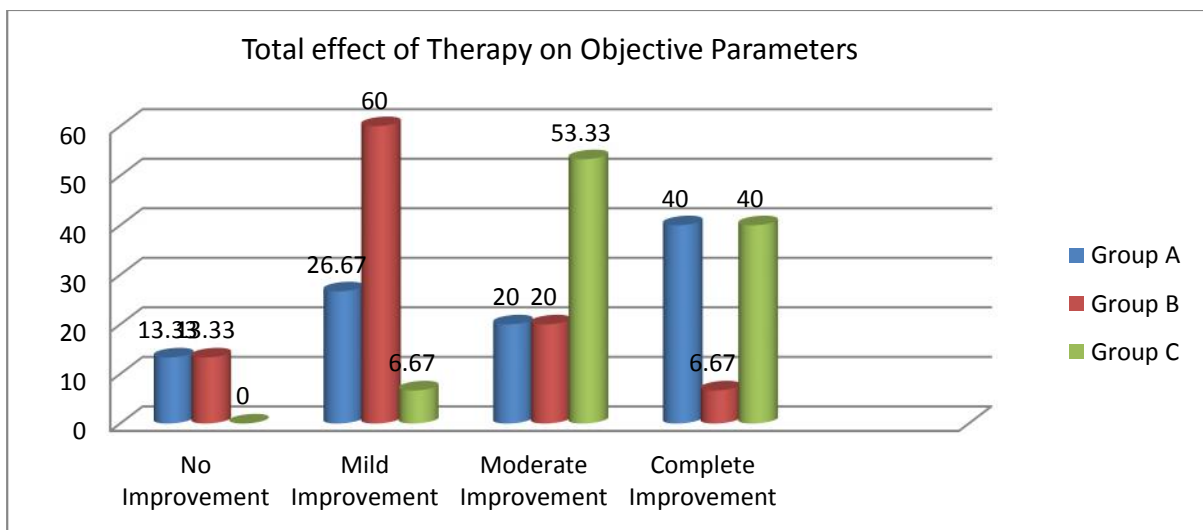
On interpretation of the results of effect of therapy on subjective parameters, one can conclude that effect of therapy on subjective parameters of all the three groups were insignificant. It means that all the therapies have more or less same effect

and any one of them can't be claimed as superior to other statistically or in other words we can say that Group C was better than Group B followed by Group A in all aspects (clinical significance).

Table No: 3 Total Effect of Therapy in 30 Patients of Pandu (Objective Parameters) In Percentage

Overall effect of Therapy on Objective Parameters				
	No Improvement	Mild Improvement	Moderate Improvement	Complete Improvement
Group A	13.33	26.67	20	40
Group B	13.33	60	20	6.67
Group C	0	6.67	53.33	40

Fig.2



On interpretation of the results of effect of therapy on objective parameters, one can conclude that effect of therapy on objective parameters of all the three groups were insignificant. It means that all the therapies have more or less same effect and any one of them can't be claimed as superior to other statistically or in other words we can say that Group C was better than Group B followed by Group A in all aspects (clinical significance).

DISCUSSION

Srotasa which represent the internal transport system include a series of the channels through which *rasa raktaadi dhatu* is propelled to all parts of the body. *Srotasa* sub serve the needs of transportation. The importance of the knowledge of *srotomoola* (sites of origin) of *srotasa* (channels) is not directly described in *samhitas*. There is very small description

of *moola* found in *viman sthana* of *Charaka Samhita*.^[9] *Moola* means origin. *Acharya Sushruta* has also described symptoms due to the injury at the *moola* (sites of origin) of the *srotasa* i.e. channels of circulation. *Acharya Charaka* has mentioned *hridaya* and *rasavaha dhamni* as the *moola* of *rasvaha srotas* in *vimana sthana*. Similarly, *Acharya* has described *rasdhatu pradoshaja vikara* in *su-trasthanas*.

Probable mode of action: The probable action on *samprapti ghatak* can be understood from the properties of *vrikshamla*. It has *rasa* which is *madhura, kashaya, tikta*. *Tikta Rasa* is *ruchihar* (appetizing), *krimighana* (anthelmintic), *vishaghan* (anti-poisonous) and useful in *twak* (skin) and *Mamsa* (tissue related) *vikaras*, *agnideepan* (stimulants in increasing digestive fire), *Pachana, Lekhaniya, kledahara*

and *pittahar*. So this drug increased the digestive fire up to optimum level and *Dhatunirman* (tissue making process) got toned up which resulted ultimately to *dhatu pushti*. Also *mandagni* (low digestive fire) is the main cause of *Pandu roga* and *vrikshamla* has *deepana*, *panchana* property. So this drug diminished *mandagni* and broke the pathogenesis of *Pandu Roga*.

Maximum numbers of drugs in *Shadushna churna* possess *laghu*, *ruksha guna* and *tikta*, *kashaya rasa*. Thus these drugs also possess *sroto shudhdhikar* (clearing channels) property and helped in clearing the *srotas*. The formation of *ama* (~one type of slow poison) is the main cause of *srotorodha* (blockage of channels) in *Pandu*. These drugs further helped in clearing the channels of communication thus increasing the process of efficient metabolism which further helped in production of nutrient factors required for nourishing all the tissues including *Rakta*. This helped in breaking the pathogenesis of *Pandu roga*.

Phaltrikadi ghan vati constitutes *Haritaki* (*Terminalia Chebula*), *Vibhitaki* (*Terminalia Bellirica*), *Amalaki* (*Pyllanthus emblica*), *Guduchi* (*Tinospora cordifolia*), *Vasa* (*Adhatoda Vasica*), *Katuki* (*Picorhizza Kurrooa*), *Chirayata* (*Swertia Chirata*), and *Neem* (*Azadirachta Indica*). Going by the properties of all the ingredients of *Phaltrikadi ghan vati*, it is concluded that it produced *pittashamak*, *pittavirechaniya*, *raktashodaka*, *deepan*, *pachana* effect which normalized *agnivaishamya* and produced *raktavardhak* effect. Moreover *Amalaki* is a proved drug for *Pandu*.

CONCLUSION

The resolution of the present study was to understand the functional utility of *srotomoola*. *Srotasa* implement their function by *srotomoola*. The drugs used in this

trial, acted on *srotomoola* which connecting through *srotas* helped in curing the disease. Results were found well in that group of patients which had taken medicine prescribed for treatment of *srotomoola* though the results varied clinically and statistically. So on the basis of results of subjective parameters; we can conclude that *srotomoola chikitsa* will give better response to cure of any *dhatu pradoshaja vikara*. Keeping the above facts in view, we can conclude that the combined association of treating both the *moola* of any *srotas* and the *vyadhi pratyanyika chikitsa* will be a constructive endeavor in treatment modalities in *ayurvedic* field.

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