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

Shweta Dewan1, Mahesh Chouhan2, Baldev Kumar3

1Ph.D Scholar, Department of Basic Principles, 2, 3Assistant Professor, Department of Basic Principles National Institute of Ayurveda, Jaipur, Rajasthan, 3 Chomu Ayurveda College, Jaipur, Rajasthan, India

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 srotas. Pandu is one of the diseases of rasavaha srotas. 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 dhata, 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.r.t. 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 Pratyayika 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. 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 sthanga and margata dhatus are involved, the vitiation spreads from one dhata (body tissues) to another and all srotas are involved simultaneously. All this whiles nothing much
has been expounded on srotomoola as such. As a rasadhatu 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 Ayurvida, 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, hridya 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 Indica). [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. 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.

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

<table>
<thead>
<tr>
<th>Group</th>
<th>Drug Administered</th>
<th>Dose</th>
<th>Anupana</th>
<th>Time of Administration</th>
<th>Duration of Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Hridaya yoga: Vrikshamla Churna</td>
<td>5 gm</td>
<td>water</td>
<td>Twice a day.</td>
<td>2 months.</td>
</tr>
<tr>
<td>B</td>
<td>Srotoshodhaka yoga: Shadushna Churna</td>
<td>3 gm</td>
<td>water</td>
<td>Twice a day.</td>
<td>2 months.</td>
</tr>
<tr>
<td>C</td>
<td>Panduhara yoga: Phaltrikadi ghan vati</td>
<td>500mg</td>
<td>water</td>
<td>Twice a day.</td>
<td>2 months.</td>
</tr>
</tbody>
</table>

Diagnostic Criteria: Subjective Parameters that were assessed before and after the study were as follows:
- Aruchi (Loss of appetite)
- Panduta (Pallor)
- Daurbalya (Weakness).
- Hridaya 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/mm3)
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 Pandu 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. 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):**

<table>
<thead>
<tr>
<th>Group</th>
<th>No Improvement</th>
<th>Mild Improvement</th>
<th>Moderate Improvement</th>
<th>Complete Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>0.63</td>
<td>23.33</td>
<td>10</td>
<td>3.33</td>
</tr>
<tr>
<td>Group B</td>
<td>51.66</td>
<td>23.33</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Group C</td>
<td>50</td>
<td>15</td>
<td>13.33</td>
<td>21.66</td>
</tr>
</tbody>
</table>

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%).

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

<table>
<thead>
<tr>
<th>Overall effect of Therapy on Objective Parameters</th>
<th>No Improvement</th>
<th>Mild Improvement</th>
<th>Moderate Improvement</th>
<th>Complete Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>13.33</td>
<td>26.67</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Group B</td>
<td>13.33</td>
<td>60</td>
<td>20</td>
<td>6.67</td>
</tr>
<tr>
<td>Group C</td>
<td>0</td>
<td>6.67</td>
<td>53.33</td>
<td>40</td>
</tr>
</tbody>
</table>

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-trasthan.

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 Shadushana churna possess *laghu, ruksha guna* and *tikta, kashaya rasa*. Thus these drugs also possess *srotOSHudhdhikar* (clearing channels) property and helped in clearing the *srotas*. The formation of *ama* (~one type of slow poison) is the main cause of *srotrodha* (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 Vasicia*), *Katuki* (*Picorrhiza 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, pittavirechniya, 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 pratyantika chikitsa* will be a constructive endeavor in treatment modalities in *ayurvedic* field.

**REFERENCES**


CORRESPONDING AUTHOR

Dr. Shweta Dewan
Email: arorau51@yahoo.com

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