



Research Article

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ROLE OF TARAMANDURA GUDA IN PANDU WITH SPECIAL REFERENCE TO IRON DEFICIENCY ANAEMIA

Rashmi TM^{1*}, Shettar RV²

¹PG Scholar, Department of Kayachikitsa, DGM Ayurvedic Medical College, Gadag, Karnataka, India

²Professor, Department of Kayachikitsa, DGM Ayurvedic Medical College, Gadag, Karnataka, India

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*Corresponding author

Dr Rashmi TM, PG Scholar, Department of Kayachikitsa, DGM Ayurvedic Medical College, Gadag, Karnataka, India

E-mail: puttuayu@gmail.com

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ABSTRACT

Iron deficiency anaemia is one of the wide-spread diseases in India, especially among the poor and more common in women of reproductive age due to menstrual blood loss which varies from woman to woman and from cycle to cycle. It's a disease involving multiple systems rather than a pure haematological condition by which it shows similarity with Pandu Roga. The present study was undertaken to evaluate the efficacy of taramandura guda in pandu with special reference to iron deficiency anaemia among women. 30 diagnosed cases of Pandu, in age group of 20-35 years were selected for the study. Taramandura Guda was given for 40 days to the patients at the dose of 500 mg thrice daily. Detailed research proforma was prepared to record the observations which were graded as per their severity. The results obtained after the clinical study were analysed statistically and all the observations were subjected to discussion. Overall assessment of the therapy was done based on the significance of the statistical test values in both subjective and objective parameters. The final results showed improvement in majority of these parameters. The study revealed a remarkable efficacy of the trial drug in relieving almost all the clinical features within the study duration of 40 days, establishing the multifaceted action of the drug.

Keywords: Pandu, Iron Deficiency Anemia, Taramandura Guda

INTRODUCTION

Ayurveda is the oldest system of health care dealing with both preventive and curative aspects of life in a most comprehensive way and presents a close similarity to the WHO's concept of health pronounced in the modern era. Pandu is varnopalakshitha vyadhi and is mentioned in both santarpanotta and apatarpanotta vikaras, where in Panduta is pratyatma lakshana and sa alparaktho alpa medasko¹ is also said for Pandu. This description avails the correlation of Pandu with anaemia in modern science. Iron Deficiency Anaemia is a disease that has similar paleness, constitutional symptoms, aetiology and pathogenesis. Pandu and Iron Deficiency Anaemia have been studied in parallel to facilitate a better understanding of the disease and to devise a better management. This disease was chosen for the study due to its extremely high incidence. Iron deficiency is the commonest nutritional deficiency worldwide and its prevalence is highest in India. In India 45 % adult females, 30 % adult males, 80 % pregnant females and 60 % children suffer from Iron Deficiency Anaemia.² Pandu is due to vitiation of both rasa and rakta dhatu which are essential for the nourishment of every cell in the body. Rasa dhatu is considered to be tarpanakaraka and pustikaraka for rakta³. It is clear that Pandu occurs due to improper functioning of rasa leading to malnourishment of body and deterioration of other dhatus like rakta, mamsa, meda, etc. In Ayurvedic classics rakta is considered as key factor for jeevana, preenana, dharana, poshana karma of the body⁴. Around 211 clinical studies were recorded on Pandu across various Postgraduate institutions in India.⁵ Review suggests that majority of works contain herbomineral preparations to combat this condition. So the study has been taken up to evaluate the efficacy of Taramandura Guda in Pandu among women of reproductive age group.

Even though a lot of preparations are available in contemporary medicine for Iron Deficiency Anaemia, they are associated with adverse and unpleasant effects like gastritis, altered bowel movements etc. On the other hand the proposed trial yoga Taramandura Guda is an Ayurvedic classical yoga described in Bhaishajya Ratnavali, Shoolaroga chikitsa prakarana and Chakradatta Parinamashoola adhikara, appears to be safe since it contains Triphala, Trikatu, Chavya, Chitraka, Vidanga, Mandura Bhasma, Guda and Gomutra which are routinely used in practice⁶.

Research Approach

The main aim of study was to evaluate the clinical efficacy of Taramandura Guda in Pandu among female patients of reproductive age group -20- 35 years.

Research Design

The research design set for the present study was open label clinical study.

Sample size

30 patients were selected for a single group who had satisfied the inclusion criteria.

MATERIALS AND METHODS

Source of Data

Patients suffering from Pandu were selected from OPD and IPD of D.G.M.A.M.C. and H, Gadag, Karnataka, India after fulfilling the inclusion and exclusion criteria. Detailed history was taken and special research Performa was prepared for the study incorporating all the relevant points from Ayurvedic and modern views. Ethical clearance was obtained from the Institutional ethical committee.

Selection of Drugs

The trial drugs were collected from local market after proper identification.

Preparation of Medicine: Taramandura Guda

Ingredients

Table 1: Ingredients of Taramandura Guda

Sanskrit Name	Latin Name	Quantity
Vidanaga	<i>Embelia ribes</i>	1 part
Chitraka	<i>Plumbago zeylanica</i>	1 part
Chavya	<i>Piper chaba</i>	1 part
Haritaki	<i>Terminalia chebula</i>	1 part
Vibitaki	<i>Terminalia bellerica</i>	1 part
Amalaki	<i>Emblica officinalis</i>	1 part
Shunti	<i>Zingiber officinale</i>	1 part
Maricha	<i>Piper nigrum</i>	1 part
Pippali	<i>Piper longum</i>	1 part
Mandurabasma	-----	9 parts
Gomutra	-----	18 parts
Guda	-----	9 parts

Preparation of the medicine was done as per The Ayurvedic Formulary of India.

Method of Collection of Data

Study Design

Simple clinical study with pre and post treatment assessment

Sample size

30 patients in a single group

Inclusion Criteria

- Female patients of Pandu between the age group of 20 – 35 years.
- Hb % below 11.5 g/ dl.

Exclusion Criteria

- Known cases of Thalassemia, Sickle cell Anaemia, Pernicious Anaemia
- Anaemia associated with any malignancy.
- Patients under chemotherapy and radiation treatment, etc.
- Pregnant women and lactating mother.

Criteria for Diagnosis

The diagnosis was mainly based on clinical presentation of the patients, according to signs and symptoms mentioned in classical Ayurvedic texts, which are described under subjective and objective parameters.

Posology

Taramandura Guda: 500 mg thrice a day with Anupana of Sukoshna Jala.

Study Duration

- Taramandura Guda: - 40 days .
- Follow up for 30 days.
- Total duration 70 days.

Assessment of Results

Assessment of results was done on subjective and objective parameters of base line data to pre and post medication data comparing with gradation. The data of the study were analyzed statistically by paired 't' test. The improvement in patient was assessed mainly on the basis of subjective and objective parameters.

Subjective Parameters

The symptoms of Pandu as described in the Charaka Chikitsa were taken as subjective parameters –

Table 2: Subjective Parameters

Sl No	Subjective Parameters
1	Panduta – In Twak, Nakha, Netra, Jihwa, Hastha, Pada thala
2	Shrama
3	Bhrama
4	Arohanaayasa
5	Dourbalya
6	Aruchi
7	Pindikodwestana
8	Shoonakshi koota
9	Gatra Shoola.

Objective Parameters

Haemoglobin, RBC, PCV, MCV, MCHC and Serum Iron

RESULTS AND DISCUSSION

Table 3: General Observations

General observations	No. of Patients	%
Age (20-25 Years)	20	66.66
Religion(Hindu)	22	73.33
Education status (Literate)	24	80
Occupation (Student)	19	63.33
Socio-economic status (Middle)	22	73.33
Marital status (Unmarried)	20	66.66
Dwelling status (Urban)	21	70
Addiction (Tobacco)	01	3.33
Kshudha [Poor]	26	86.66
Type of Diet (Vegetarian)	13	43.33
Dominant Rasa in Diet (Katu)	27	90
Dietary Habits (Vishamashana)	25	83.33
Nidra (Sound)	17	53.33
Menstrual History(Regular Menstrual cycle)	28	93.33
Koshta [Madhyama]	15	50
Chronicity [7-12 months]	16	53.33
Built of patient (Madhyama)	15	50
Sharira Prakruti [Vata pitta]	16	53.33
Manasika Prakruti [Rajas]	30	100
Sara [Madhyama]	26	86.66
Samhanana [Madhyama]	21	70
Pramana [Madhyama]	15	50
Satmya [Madhyama]	19	63.33
Satva [Madhyama]	30	100
Abhyavaharana Shakti [Avara]	25	83.33
Jarana Shakti [Avara]	22	73.33
Vyayama Shakti [Avara]	16	53.33
Vaya [Yuvana]	30	100

In the present study, the selected age group and sex was between 20- 35 years females i.e. females in the reproductive age group were selected because of high incidence of about 44 % and also due to its menstrual blood loss which varies from each subject and their respective menstrual cycles and in menstruating females, iron requirement is also more compared to males, and moreover following menarche, females often do not consume sufficient Iron to offset menstrual losses. Most of the patients were students, among them majority were staying in hostel. The reason for acquiring IDA in this group may be due to improper diet, nutrition, excessive

indulgence in junk foods and mental stress.⁷ Vegetarians are more vulnerable to this disease as they can't get enough Iron from vegetarian food, as well Iron which is available from vegetarian sources i.e. Non-haeme Iron has less bioavailability.⁸ All the 30 patients were in active menstruation phase. Among them, maximum i.e. 93.33 % of patients had regular menstruation, 50 % had leucorrhoea, 6.66 % had irregular cycle and 3.33 % had dysmenorrhoea. However women with normal menstruation, if don't take sufficient Iron containing foods may develop IDA.

Table 4: Effect of therapy

Parameters		Mean score	Mean Diff	% of Relief	SD	SE	t value	p value	Significant
Panduta	BT	2.467	1.233	49.99	0.430	0.0785	15.703	< 0.001	S
	AT	1.233							
Dourbalya	BT	1.667	1.167	70	0.379	0.0692	16.858	< 0.001	S
	AT	0.500							
Shrama	BT	1.567	1.267	80.85	0.450	0.0821	15.425	< 0.001	S
	AT	0.300							
Bhrama	BT	1.200	1.033	86.08	0.320	0.0584	17.696	< 0.001	S
	AT	0.167							
Pindiko dveshtana	BT	0.633	0.600	94.78	0.621	0.113	5.288	< 0.001	S
	AT	0.0333							
Gaatra shoola	BT	1.700	1.267	74.25	0.450	0.0821	15.425	< 0.001	S
	AT	0.433							
Arohana Aayasa	BT	2.000	1.467	73.35	0.507	0.0926	15.832	< 0.001	S
	AT	0.533							
Aruchi	BT	2.067	2.067	100	0.365	0.0667	31.000	< 0.001	S
	AT	0.000							
Shoonakshi koota	BT	0.233	0.200	85.83	0.407	0.0743	2.693	0.012	S
	AT	0.0333							

Objective Parameter									
Hb%	BT	9.023	1.343	14.88	0.463	0.0845	15.895	< 0.001	S
	AT	10.367							
RBC	BT	4.246	0.598	14.08	0.252	0.0460	13.000	< 0.001	S
	AT	4.843							
PCV	BT	31.050	3.173	10.22	1.094	0.200	15.894	< 0.001	S
	AT	34.223							
MCV	BT	68.000	6.290	9.25	3.561	0.650	9.674	< 0.001	S
	AT	74.290							
MCHC	BT	29.713	2.643	8.89	1.278	0.233	11.330	< 0.001	S
	AT	32.357							
Serum Iron	BT	107.90	18.063	16.74	28.471	5.198	3.475	0.002	S
	AT	125.96							

BT – Before Treatment, AT – After Treatment, SD – Standard Deviation, SE – Standard Error

Panduta

In Panduta 49.9 % relief was found which was statistically highly significant. Taramandura Guda has Trikatu, Amalki, Mandura Bhasma like drugs which are agnideepaka, Amapachaka, Raktavardhaka and Srotoshodhaka as well. Aamalaki helps in absorption of Iron also. Thus provides highly significant relief in the above symptom.

Dourbalya

70 % relief was found in case of dourbalya which was statistically highly significant. Taramandura guda has deepana, pachana, srotoshodhaka drugs which improves the Agni, cleanses ama as well as all the channels resulting in proper formation of Dhatus giving relief in Daurbalyata.

Shrama

In symptom Shrama, 80.85 % relief was found which was highly significant. As there are Srotovishudhi and Deepagni leading to formation of proper Dhatus providing more nourishment, producing relief in above Symptom.

Bhrama

Highly significant improvement of 86.08 % was found in case of Bhrama. This may be due to proper oxygen and blood supply to the tissues.

Pindikodvestana

Highly significant improvement was found in Pindikodvestana. This was due to vata kapha shamaka, ama pachaka effect of Taramandura guda, which in turn corrects the metabolism and proper oxidation of muscular tissue which leads to very less accumulation of lactic acid in muscular tissue, and producing more relief which is statistically highly significant.

Gatrashoola

In case of Gatrashoola also, significant improvement was found. This may be because, Taramandura Guda does improvement in the metabolism and absorption of iron and other nutrients, thus providing proper nourishment to rasa and rakta and combating dhatu kshaya.

Arohanaayasa

73.55 % relief was found in case of Arohanayasa. This may be because of improved metabolism, leading to proper absorption of iron and proper PO₂ in blood, relieving Hypoxia thus relieving exertional dyspnoea.

Shoonakshikoota

It was present in only 7 patients with mild degree and 85.83 % relief was found in it. Most of the ingredients of the trial drug are stimulants, digestives and bioavailability enhancers of the nutrients, thus correcting the nutritional deficiency and dhatu shaithilya were the reason for Shoonakshikoota.

Aruchi

It was present in all the patients and 100 % relief was found in it, may be because of agnideepana, amapachana and srotoshodhana action of Taramandura Guda.

On Objective Parameters

Haemoglobin

14.88 % improvement was found in Hb %, which is statistically highly significant. The trial drug has supplemented and improved the absorption of iron and thus improved Hb %

RBC

14.08 % improvement was found in RBC, which is statistically highly significant.

PCV

10.22 % improvement was found in PCV.

MCV, MCHC

Significant improvement was found in both parameters.

Serum Iron

Significant improvement was found in this parameter as well. In the present study, few patients had serum iron levels below normal range and more number of patients had serum iron level within normal range. This is because serum iron level gets reduced in severe anaemia, i.e. when the haemoglobin level is 7 g% and below. But in this normal limit also, improvement was found in serum iron levels by the given trial drug.

Overall Effect of Therapy

Table 5: Overall effect of Therapy

Overall Result	No of patients (n = 30)	%
Cured	00	00
Markedly Improvement	06	20
Moderate Improvement	20	66.66
Mild improvement	04	13.33
Unchanged	00	00

In the present study moderate improvement was found in 66.66 % of patients. 20 % patients were markedly improved and 13.33 % patients were found with mild improvement. None of the patients were completely cured.

CONCLUSION

An appreciable role of Taramandura Guda in the management of Pandu was the outcome of this study. An alarming rise in incidence in IDA needs to be combated with an efficacious medicine. The trial drug has proven its potential in this perspective. Further improvement in results can be appreciated by increasing the duration of the study.

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