https://doi.org/10.47552/ijam.v16i1.5217 ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 16 (1), 2025; 44-51

Comparative efficacy of *Ayaschurnadi yog* and *Dhatri loha* in management of Garbhini pandu (Iron deficiency anaemia in pregnancy)

Research Article

Kalyani Kharad[1], Madhulika D Tiwari[2]*, Archana Chikate[1]

1. Assistant Professor, PTSR department, CSMSS Ayurveda College Kanchanwadi Chh. Sambhajinagar. India.
2. Associate Professor, Department of Rachana Sharir, Dr. D. Y. Patil College of Ayurveda & Research Centre, Dr. D. Y. Patil Vidyapeeth, Pimpri, Pune. India.

Abstract

Effective management of iron deficiency anaemia during pregnancy is vital for the well-being of both the mother and the fetus. In Ayurveda, this condition is referred to as Garbhini Pandu, characterized by symptoms like panduta (pallor), weakness loss of appetite along with a deficiency of blood (*Rakta Dhatu*) and impaired nourishment of the body and fetus. Ayurvedic medicine offers various herbo-mineral formulations to address this condition. This study compares the efficacy of Ayaschurnadi Yog and Dhatri Loha in the management of Garbhini Pandu. Participants were randomly divided into two groups i.e. Group A- trial group and Group B- control group. Group A were treated with Ayaschurnadi Yog while Group B were given Dhatri Loha. Outcomes were assessed using subjective parameters such as pallor (*panduta*) of nails (*nakha*), conjunctiva (*netra*), tongue (*jivha*), palm and sole (*hastapadatala*), loss of appetite (*agnimandya*), weakness (*daurbalya*), palpitations (*hrudspandana*), and leg cramps (*pindikodveshthana*). Objective evaluation was based on haemoglobin levels (*gm%*) assessed on the 15th, 30th and 45th day. The assessment parameters were noted before and after treatment. Observations were noted and summarized in tabular form. The results demonstrated that both formulations were effective in alleviating symptoms of Garbhini Pandu. However, Ayaschurnadi Yog showed superior efficacy in symptom relief and haemoglobin improvement. Statistical analysis confirmed the significant effectiveness of Ayaschurnadi Yog, making it a promising alternative in the Ayurvedic management of Garbhini Pandu.

Keywords: *Rasajbhava*, *Raktapradoshaj vyadhi*, *Agnimandya, Pindikodwesthan, Garbhini pandu, Anaemia.*

Introduction

Anaemia remains a significant public health concern in India, particularly among women and children. According to the National Family Health Survey (NFHS-5), the prevalence of anaemia among women aged 15 to 49 years, it stands at 57%. Specifically, a study highlighted that 87.8% of a cohort of pregnant women were anaemic, with a significant portion classified as moderately anaemic (haemoglobin levels between 7 and 9.9 g/dL) . (1)

The Government of India began the "Anaemia Mukt Bharat" (Anaemia-Free India) project in 2018 with the goal of addressing this problem through a holistic approach that includes dietary variety, behaviour change communication campaigns, and iron and folic acid supplementation. This programme offers preventative and curative interventions to vulnerable populations, such as children, adolescents, and women who are of reproductive age.(2) Despite these efforts, the high prevalence rates indicate that significant challenges remain in ensuring adequate nutrition and health care for these populations.

Garbhini Pandu indicates to a state of (pallor) discolouration of *Garbhini*. There are no clear references to anaemia in pregnancy, or *Garbhini Pandu*, in Ayurveda literature, with the exception of the descriptions of *Pandu* as a symptom of *Garbhini* in *Rakta Gulma* by *Acharya Kashyapa* and *Vivarnatva* as one of the eight problems of *Garbha* by *Acharya Harita*. (3,4) *In Charak Samhita Sharirsthanam (4/22) Acharya Charak provides a thorough explanation of vaivarnya* (discolouration) *of garbhini and Balavarnhani (decrease in strength and colour) during the sixth month of pregnancy. It may be used as a guide for Garbhini Pandu.*(5) According to *Acharya Sushrut* it is *Raktapradoshaj vyadhi* (6).

Garbhini pandu roga can be compared with Anaemia during pregnancy, because of similarity in signs and symptoms. The WHO defines anaemia in pregnancy as having a haemoglobin concentration in the peripheral blood of 11 grammes per 100 millilitres or less. During pregnancy, the plasma volume expands, causing a dilution of haemoglobin. (7) In modern sciences signs and symptoms are weakness, pallor, loss of appetite etc. This description is similar to Ayurvedic description of *Garbhini pandu*, eg:- *daurbalya(weakness), nakha- netra panduta (pallor in*

*** Corresponding Author:**

Madhulika D Tiwari

Associate Professor, Department of Rachana Sharir, Dr. D. Y. Patil College of Ayurveda & Research Centre, Dr. D. Y. Patil Vidyapeeth (Deemed to be University), Pimpri, Pune. India.

Email Id: tiwari.madhulika8@gmail.com

nails and conjunctiva), *akshikuta shoatha (swelling in the lower eyelids)*.(8)

If pregnancy induced Anaemia is not treated complications like Pre-esclampsia, Intercurrent infection, Heart failure, Pre-term labor during pregnancy may occur and during labour; uterine inertia, PPH, shock may occur.(9),(10)

Folic acid is used to treat megaloblastic anaemia's, but it has the side effect of allergic sensitization. Among the various iron salts, ferrous sulfate is most commonly used. Generally, the toxicity is proportional to the amount of iron available for absorption. (11) Deficiency of iron in pregnancy limits oxygen delivery to cellular level resulting in fatigue, poor work performance and decreased immunity. To avoid the complications in pregnancy one should take proper treatment during pregnancy. Ayurvedic drugs for *pandu* appear to be therapeutically effective. In Ayurvedic treatment principles, the approach for managing anaemia during pregnancy (*Garbhini Pandu*) focuses on selecting mild herbal medicines to avoid any harm to the developing foetus.

The "*Ayaschurnadi Yog*," recommended in the *Bharat Bhaishajya Ratnakar* for treating *Garbhini Pandu*, is a combination of herbs and iron. It includes *Loha Bhasma*, *Til* (sesame seeds), *Shunthi* (dried ginger), *Marich* (black pepper), *Pippali* (long pepper), and *Swarnamakshik Bhasma* (copper-iron pyrite ash). This formulation was comparatively evaluated for its efficacy with already established ayurvedic formulation Dhatri loha. *Ayaschurnadi Yog* was found to be safe, cost-effective, and easily available, making it a practical choice for managing anaemia in pregnant women.

Aims and objectives

1. To study comparative efficacy of *ayaschurnadi yog* and *dhatri loha* in management of *garbhini pandu* (iron deficiency anaemia in pregnancy)
2. To Study safety and tolerability of *ayaschurnadi yog* in the management of symptoms of *garbhini pandu*

Methodology

Study Design

The study was conducted on 80 diagnosed patients of *Garbhini Pandu* selected from the OPD and IPD of the Prastutitantra & Streerog Department of Ayurved Mahavidyalaya & Rugnalaya with ethical clearance from the institutional ethical committee reference no-CSMSS/IEC/2020/25. A total of 90 patients were initially included, out of which 10 withdrew during the study. Patients were divided into two groups by simple random sampling using the lottery method, following the inclusion and exclusion criteria.

A case record form was developed for collecting and recording detailed case information. Written consent was obtained from all participants after providing them with comprehensive information about the research. Observations were recorded based on pre-defined assessment criteria, with follow-ups conducted over 45 days. Statistical tests were applied to the collected data, and results were analysed accordingly.

Inclusion Criteria

1. Diagnosed patients of *Garbhini Pandu*.
2. Patients having Hb% above 7 gm% and upto 10 gm%. (≥7 to ≤10)
3. Patients of age group between 20 to 35 years.
4. Primigravida and Multigravida.
5. Patients in between 14 weeks to 30 weeks of pregnancy.

Exclusion Criteria

1. Individuals experiencing pregnancy-related issues, such as hypertension, hyperemesis gravidarum, pre-eclampsia, gestational diabetes, high risk pregnancy etc.
2. Patients suffering from severe Anaemia (Hb below 7gm%)
3. Patients having Anaemia due to Thalassemia, Sickle cell Anaemia, Pernicious Anaemia, Aplastic Anaemia, Major diseases, complications like Bleeding piles, Twin pregnancy.

Withdrawal Criteria

Patients who are unwilling to continue the trial, those who are absent for follow-up, or those who develop any adverse effects, including unbearable aggravation of symptoms, will be excluded from the study.

Investigations

1. CBC – Hb gm% and 2. USG [if necessary]

Drug Source & preparation

The raw materials for the preparation of *Ayaschurnadi yog* (12) were collected under the guidance of the Dravyaguna Department. The *churna*

Drug regimen

Table 1: Drug regimen in trial and control group

Group	Group A	Group B
Drug	*Ayaschurnadi Yoga* (12)	*Dhatri Loha* (14)
Dose	1 gm divided in 2 doses [500 mg BD]	1 gm divided in 2 doses [500 mg BD]
Route of administration	Oral	Oral
Sevana Kala	After meal	After meal
Anupana	*Takra* (buttermilk)	*Madhu* 1 Tola [10 gm] *Ghrita* 1/2 Tola [5 gm] *Sharkara* 1 Tola [10 gm]
Duration of study	45 days	45 days
No. Of patients	40	40
No. Of follow up	3	3
Drug form	*Churna*	*Churna*

https://doi.org/10.47552/ijam.v16i1.5217 ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 16 (1), 2025; 44-51

(powder) was prepared in the *Rasashala* of Ayurved Mahavidyalay and Rugnalaya, following the standard references provided in the *Sharangdhar Samhita* under the supervision of the Rasashastra and Bhaishajya Kalpana Department. A fine sieved powder of all ingredients was prepared according to the principles of *Churna Kalpana*. The formulation included equal quantities of *Loha Bhasma* (Iron powder), *Til* (Sesammum Indicum), *Shunthi*(Zingiber offincinalis), *Marich*(Piper nigerum), and *Pippali*(Piper longum), along with *Swarnamakshik Bhasma* (Ore of copper and iron pyrite) (13) in a quantity equal to the combined weight of the other ingredients, mixed with honey. Additionally, *Dhatri Loha* (14) was procured from a GMP-certified pharmaceutical company. Authentication of the drug's components was performed by the Dravyaguna Department, and its standardization was carried out in an authentic laboratory to ensure quality and consistency.

Assessment criteria

Assessment was done based on following criteria before and after treatment**.**

Subjective Criteria

Subjective criteria included evaluation based on following 5 points - *Panduta*, or pallor, is often observed in the nails (*Nakha*), eyes (*Netra)*, tongue (*Jivha*), and palms and soles (*Hastapadatala*), *Agnimandya*, characterized by a loss of appetite, *Daurbalya*, or weakness, *Hrudspandana*, manifesting as palpitations, *Pindikodveshthana*, or leg cramps each graded on a scale of 0-3 points.

Objective Criteria

Hb gm%: Investigation was done on the day of treatment, on 15th, 30th and 45th day of treatment.

Gradation of Subjective Criteria

Table 2: Showing Gradation of Subjective Criteria

Grade	**Panduta** [Pallor] Twak(skin) , Nakha (nails), Netra (eye), Jivha(tongue), Hastpadatala(palm & sole)	**Agnimandya** [Loss of appetite]	**Daurbalya** [Weakness]	**Hrudspandana** [Palpitation]	**Pindikodveshthana** [Leg cramps]
0	None of these – Absent	Time interval between 2 meals - 4 to 6 hours	Not experiencing any weakness when doing daily activity	No Hrudspandana	No leg cramps
1	Mild - any two of these	Time interval between 2 meals - 6 to 8 hours	Occasionally experiencing weakness, but doing out daily tasks	Hrudspandana during mild exertion	Cramps present on heavy work
2	Moderate - any three of these	Time interval between 2 meals - 8 to 10 hours	Feeling weak frequently and having an impact on day-to-day tasks	Hrudspandana for sometimes during normal activities	Cramps present after heavy work
3	Severe - more than three	Time interval between 2 meals - 10 to 12 hours	Reduced daily activity as a result of weakness	Hrudspandana persistent during normal activities	Cramps at rest without work

Gradation of Objective Criteria: Hb gm%

Table 3: Showing Gradation of Hb gm%

Score	**Description**
0	> 10 gm%
1	9 gm% to 10 gm%
2	8 gm% to 9 gm%
3	7 gm% to 8 gm%

Statistical Evaluation of Various Parameters

The "Wilcoxon Signed Rank test" was used for intra-group comparison for assessment parameters where the grading method was ordinal in nature. (that is, before and after a group's treatment), but the "Mann-Whitney U test" was used for inter-group comparisons, or comparing two groups to one another.

For quantitative parameters, "Paired t test" was used for intragroup comparison while for inter-group comparison "unpaired t test" was used.

For every parameter, we have tested our hypotheses, and the results are interpreted appropriately. A 0. 05 level of significance is maintained. Along with graphical representations and diagrams, appropriate summary statistics such as mean, median, S. D., and IQR (interquartile range) are included.

Observations and Results

The Observations and results were notes under the following heads: -

Age: Of the patients in group A, eight (20%) belonged to the age range of 21–25 years, eighteen (45%) to the age group of 26–30 years, and fourteen (35%) to the age group of 31–35 years. Within group B, seven patients (17.5%) belonged to the age range of 21–25 years, nineteen patients (47.5%) to the age group of 26–30 years, and fourteen patients (35%) to the age group of 31–35 years.

Subjective Criteria

Panduta

It was seen that out of 40 patients, - In Group A, 5% (2 Patients) had 0 grade panduta (No pallor over *Tvak, Nakh, Netra, Jivha, Hastpaad Tala*),27.5% (11 Patients) had grade 1 *panduta* (pallor over any two of these sites),62.5% (25 Patients) had grade 2 *panduta* (pallor over any three of these sites),5% (2 Patients) had grade 3 *panduta* (pallor over more than three of these sites).

After treatment it was seen that 85% (34 Patients) had 0 grade *panduta* (No pallor over *tvak, nakh, netra, jivha, hastpaad tala*),7.5% (3 Patients) had grade 1 *panduta* (pallor over any two of these sites), 7.5% (3 Patients) had grade 2 *panduta* (pallor over any three of these sites) and no patients had grade 3 *panduta*.

In Group B, 7.5% (3 Patients) had 0 grade *panduta* (No pallor over *Tvaka Nakh, Netra*, *Jivha, Hastpaad Tala*), 22.5% (9 Patients) had grade 1 *panduta* (pallor over any two of these sites), 65% (26 Patients) had grade 2 *panduta* (pallor over any three of these sites), 5% (2 Patients) had grade 3 panduta (pallor over more than three of these sites).

After treatment it was seen that, 75% (30 Patients) had 0 grade *panduta* (No pallor over *tvak, nakh, netra, jivha, hastpaad* tala), 15 % (6 Patients) had grade 1 *panduta* (pallor over any two of these sites) 10% (4 Patients) had grade 2 *panduta* (pallor over any three of these sites) and no patients had grade 3 *panduta*. Hence, Group A is more significant than Group B by 10%.

Table 4: Reduction in *panduta* (pallor)score after treatment

Group	Mean score			Median Difference	IQR of Diff. Q3- Q1	Sample size	Wicoxon sign rank test	P value
	B.T.	A.T.	Diff					
Group A	1.85	0.07	1.78	2.00	0.0	40	351	<0.05
Group B	1.97	0.27	1.70	2.00	1.0	40	435	<0.05

At the 5% level of significance, group A's median decrease in *Panduta* score following treatment is significant (P-value < 0.05). i.e., it can be claimed that Group A's *Panduta* has significantly decreased. At the 5% level of significance, group B's median decrease in *Panduta* score following therapy is significant (P-value < 0. 05). i.e., *Panduta* is significantly reduced in group B as well.

Agnimandya

It was seen that out of 40 patients, In Group A, 0% (No Patients) had 0 grade *Agnimandya*, 2.5% (1 Patient) had grade 1 *Agnimandya*,70% (28 Patients) had grade 2 *Agnimandya*, 27.5% (11Patients) had grade 3 *Agnimandya*.

After treatment it was seen that, 92.5% (37 Patients) had 0 grade *Agnimandya*, 7.5% (3 Patients) had grade 1 *Agnimandya*, 0% (No Patient) had grade 2 *Agnimandya*, 0% (no Patient) had grade 3 *Agnimandya*.

In Group B, 0% (No Patients) had 0 grade *Agnimandya*, 5% (2 Patients) had grade 1 *Agnimandya*, 65% (26 Patients) had grade 2 *Agnimandya*,30% (12 Patients) had grade 3 *Agnimandya*.

After treatment it was seen that, 85% (34 Patients) had 0 grade *Agnimandya*, 15% (6 Patients) had grade 1 *Agnimandya*, 0% (No Patients) had grade 2 *Agnimandya*, 0% (No Patients) had grade 3 *Agnimandya*. Hence, Group A is more significant than Group B by 7.5%

Table 5: Reduction in *Agnimandya* score

Group	Mean score			Median difference	IQR of diff Q3- Q1	Sample size	Wicoxon sign rank test	P value
	B.T.	A.T.	Diff					
Group A	2.30	0.10	2.20	2.00	1.0	40	465.00	<0.05
Group B	2.37	0.20	2.17	2.00	0.8	40	465.00	<0.05

At the 5% level of significance, group A's median *Agnimandya* score drop following therapy is significant (P-value < 0.05). That is to say, there has been a notable decline in *Agnimandya* for Group A.

At the 5% level of significance, group B's median *Agnimandya* score drop following therapy is significant (P-value < 0.05). i.e., *Agnimandya* is significantly reduced in group B as well.

Daurbalya

It was seen that out of 40 patients, In Group A, 0% (No Patients) had 0 grade *Daurbalya*,12.5% (5 Patients) had grade 1 *Daurbalya*,62.5% (25 Patients) had grade 2 *Daurbalya*,25% (10 Patients) had grade 3 *Daurbalya*.

After treatment it was seen that, 90% (36 Patients) had 0 grade *Daurbalya*, 10% (4 Patients) had grade 1 *Daurbalya*, 0% (0 Patients) had grade 2 *Daurbalya*, 0% (0 Patients) had grade 3 *Daurbalya*.

In Group B, 0% (0 Patients) had 0 grade *Daurbalya*, 10% (4 Patients) had grade 1 *Daurbalya*, 57.5% (23 Patients) had grade 2 *Daurbalya*, 32.5% (13 Patients) had grade 3 *Daurbalya*.

After treatment it was seen that, 85% (34 Patients) had 0 grade *Daurbalya*, 5% (2 Patients) had grade 1 *Daurbalya*, 10% (4 Patients) had grade 2 *Daurbalya*, 0% (0 Patients) had grade 3 *Daurbalya*. Hence, Group A is more significant than Group B by 5%.

Table 6: Reduction score in *Daurbalya*

Group	Mean score			Median Diff	IQR of diff Q3- Q1	Sample size	Wicoxon sign rank test	P value
	B.T.	A.T.	Diff					
Group A	2.20	0.10	2.10	2.00	1.0	40	406	< 0.05
Group B	2.20	0.17	2.03	2.00	1.0	40	435	< 0.05

https://doi.org/10.47552/ijam.v16i1.5217 ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 16 (1), 2025; 44-51

At the 5% level of significance, group A's median *Daurbalya* score drop following therapy is significant (P-value < 0.05). i.e., it can be claimed that Group A's *Daurbalya* has significantly decreased.
At the 5% level of significance, group B's median *Daurbalya* score drop following therapy is significant (P-value < 0.05). i.e., *Daurbalya* has significantly decreased in group B as well.

Hrudspandan

It was seen that out of 40 patients, In Group A, 17.5% (7 Patients) had 0 grade *Hrudspandan*, 40% (16 Patients) had grade 1 *Hrudspandan*, 42.5% (17 Patients) had grade 2 *Hrudspandan*, 0% (0 Patients) had grade 3 *Hrudspandan*.

After treatment it was seen that, 90% (36 Patients) had 0 grade *Hrudspandan*, 10% (4 Patients) had grade 1 *Hrudspandan*, 0% (0 Patients) had grade 2 *Hrudspandan,* 0% (0 Patients) had grade 3 *Hrudspandan*.

In Group B, 20% (8 Patients) had 0 grade *Hrudspandan*, 37.5% (15 Patients) had grade 1 *Hrudspandan*, 42.5% (17 Patients) had grade 2 *Hrudspandan*, 0% (0 Patients) had grade 3 *Hrudspandan*.

After treatment it was seen that, 82.5% (33 Patients) had 0 grade *Hrudspandan*,17.5% (7 Patients) had grade 1 *Hrudspandan*, 0% (0 Patients) had grade 2 *Hrudspandan*, 0% (0 Patients) had grade 3 *Hrudspandan*.

Hence, Group A is more significant than Group B by 7.5%.

Table 7: Reduction score in *Hrudspandan*

Group	Mean score			Median Diff	IQR of diff Q3- Q1	Sample size	Wilcoxon sign rank test	P value
	B.T.	A.T.	Diff					
Group A	1.32	0.05	1.27	1.00	0.8	40	253	< 0.05
Group B	1.65	0.31	1.35	2.00	1.0	40	231	< 0.05

At the 5% level of significance, group A's median *Hrudspandan* score drop following treatment is significant (P-value < 0. 05). That is to say, there has been a notable decrease in *Hrudspandan* for Group A.
At the 5% level of significance, group B's median *Hrudspandan* score drop following treatment is significant (P-value < 0. 05). That is, there is a noteworthy decrease in *Hrudspandan* in group B as well.

Pindikodveshtan

It was seen that out of 40 patients, In Group A, 0% (0 Patients) had 0 grade *Pindikodveshtan*, 10% (4 Patients) had grade 1 *Pindikodveshtan*, 75% (30 Patients) had grade 2 *Pindikodveshtan*,15% (6 Patients) had grade 3 *Pindikodveshtan*.

After treatment it was seen that, 87.5% (35 Patients) had 0 grade *Pindikodveshtan*, 10% (4 Patients) had grade 1 *Pindikodveshtan*, 2.5% (1 Patient) had grade 2 *Pindikodveshtan*, 0% (0 Patients) had grade 3 *Pindikodveshtan*.

In Group B, 0% (0 Patients) had 0 grade *panduta*, 15% (6 Patients) had grade 1 *panduta*, 72.5% (29 Patients) had grade 2 *panduta*, 12.5% (5 Patients) had grade 3 *panduta*.

After treatment it was seen that, 80% (32 Patients) had 0 grade *Pindikodveshtan*, 12.5% (5 Patients) had grade 1 *Pindikodveshtan*, 7.5% (3 Patients) had grade 2 *Pindikodveshtan*,0 % (0 Patients) had grade 3 *Pindikodveshtan*. Hence, Group A is more significant than Group B by 7.5%.

Table 8: Reduction in *Pindikodveshtan* score

Group	Mean score			Median Diff	IQRof diff Q3- Q1	Sample size	Wicoxon sign rank test	P value
	B.T.	A.T.	Diff					
Group A	2.27	0.07	1.83	2.00	0.8	40	465	< 0.05
Group B	2.10	0.27	2.20	2.00	0.8	40	406	< 0.05

At the 5% level of significance, group A's median decrease in *Pindikodveshtan* score following therapy is significant (P-value < 0. 05). That is to say, there has been a notable decline in *Pindikodveshtan* for Group A.
At the 5% level of significance, group B's median decrease in *Pindikodveshtan* score following therapy is significant (P-value < 0. 05). i.e., *Pindikodveshtan* is significantly reduced in group B as well.

Objective Criteria
Haemoglobin Percentage

It was seen that out of 40 patients, In Group A, 2.5% (1 Patients) had 10 gm% (as per inclusion upto 10 gm % patients were included ≤10) Haemoglobin, 42.5% (17 Patients) had Hb % more than 9 and less than 10gm% (>9 and <10), 32.5% (13 Patients) had Hb% between 8-9 gm%, and 22.5% (9 Patients) had Hb % in between 7-8gm%.

After treatment it is seen that, 50% (20 Patients) had 10 gm Hb%, 27.5% (11 Patients) had Hb % between 9-10, 17.5% (7 Patient) had Hb % between 8-9gm%, 5% (2 Patients) had Hb % between 7-8 gm%.

In Group B, it is seen that, 5% (2 Patients) had 10gram Hb% (as per inclusion up to 10 gm % patients were included ≤10) , 30% (12 Patients) had Hb % more than 9 and less than 10gm% (>9 and <10), 47.5% (19 Patient) had Hb % between 8-9gm%, 17.5% (7 Patients) had Hb % between 7-8 gm%.

After treatment,45% (18 Patients) had 10 gm% haemoglobin, 25% (10 Patients) had Hb % between 9-10gm%, 22.5% (9 Patients) had Hb% between 8-9 gm%, and 7.5% (3 Patients) had Hb % in between 7-8gm%.

Table 9: Increase in haemoglobin score

	Mean score			SD OF Diff	SE Of diff	Sample size	Paired t test	P value
	B.T.	A.T.	Diff					
Group A	9.36	13.06	3.07	0.62	0.11	40	32.54	0.026
Group B	9.21	9.34	0.13	0.16	0.03	40	4.44	0.030

According to a paired t test, group A's mean rise in haemoglobin level was significant (P value = 0.030) at the 5% level of significance. Thus, raising haemoglobin is a successful outcome of treating group A. Additionally, the test indicates that, at the 5% level of significance, group B's mean rise in haemoglobin level was significant (P-value = 0.026).

Table 10: Comparison of Group A & B haemoglobin increase by unpaired t test'

Group	Mean Diff (BT-AT)	SD of Diff (BT-AT)	Sample size	Unpaired T value	P value
Group A	3.70	0.62	40	30.32	<0.05
Group B	0.13	0.16	40	30.57	<0.05

Furthermore, at the 5% level of significance, it was shown that group A's increase in haemoglobin was considerably higher (P-value < 0.05) than group B's using the "unpaired t test." Therefore, it can be concluded that treatment A is more successful than treatment B at raising haemoglobin.

Statistical analysis

Table 11: Wilcoxon matched-paired signed rank test used to statistically analyse Group A's subjective metrics respond to treatment

	Symptom		Mean	SD	SE	W	N	P
1	***Panduta***	BT	0.833	1.177	0.2149	-541	40	0.0354 significant
		AT	1.133	0.8193	0.1496			
		DI FF	-0.300	0.9154	0.1671			
2	***Agnimandya***	BT	1.833	0.4611	0.0841	-354	40	0.0164 Significant
		AT	2.00	0.2626	0.0479			
		DI FF	0.1667	0.5307	0.09689			
3	***Dourbalya***	BT	2.133	0.9371	0.1711	-361	40	0.0284 Very
		AT	2.433	0.7270	0.1329			
		DI FF	-0.300	0.5350	0.0976			Significant
4	**Hrudspandan**	BT	0.733	0.8277	0.1511	-368	40	0.0452 significant
		AT	2.500	0.7768	0.1481			
		DI FF	-1.767	1.235	0.2072			
5	***Pindikodveshtan***	BT	0.325	0.6521	0.0256	-425	40	0.0345 Significant
		AT	1.562	0.2356	0.0127			
		DI FF	-1.237	0.4165	0.0129			

Table 12: Wilcoxon matched-paired signed rank test used to statistically analyse Group B's subjective metrics respond to treatment

	Symptom		Mean	SD	SE	W	N	P
1	*Panduta*	BT	0.833	1.177	0.2149	-54	40	0.1354 Significant
		AT	1.133	0.8193	0.1496			
		DI FF	-0.300	0.9154	0.1671			
2	*Agnimandya*	BT	1.833	0.4611	0.0841	-35	40	0.01641 Significant
		AT	2.00	0.2626	0.0479			
		DI FF	0.1667	0.5307	0.09689			
3	*Dourbalya*	BT	2.133	0.9371	0.1711	-36	40	0.0178 Significant
		AT	2.433	0.7270	0.1329			
		DI FF	-0.300	0.5350	0.0976			

https://doi.org/10.47552/ijam.v16i1.5217 ISSN No: 0976-5921

International Journal of Ayurvedic Medicine, Vol 16 (1), 2025; 44-51

4	*Hrudspandan*	BT	0.733	0.8277	0.1511	-368	40	0.0421 significant
		AT	2.500	0.7768	0.1481			
		DI FF	-1.767	1.235	0.2072			
5	*Pindikodveshtan*	BT	0.896	0.5781	0.2486	-354	40	0.0241 Significant
		AT	1.485	0.1579	0.1782			
		DI FF	-0.589	0.420	0.070			

Table 13: Comparison between two groups with respect to criteria score by Mann Whitney test after

Sr.no	Symptoms	Mean + SD	Confidence limits		P value
			Lower	Upper	
1	***Panduta***				
	Group A	1.133+0.819	0.8274	1.439	0.0466 Significant
	Group B	1.20+0.7611	0.9158	1.484	
2	***Agnimadya***				
	Group A	2.00+0.2626	1.902	2.098	0.0164
	Group B	1.90+0.6074	1.673	2.127	Significant
3	***Dourbalya*** **Group A** **Group B**	2.50+0.7768 1.533+1.196	2.210 1.087	2.790 1.980	0.021 Significant
4	***Hrudspandan*** **Group A** **Group B**	2.500+0.776 10485+0.561	1.925 1.025	2.621 1.985	0.024 Significant
5	***Pindikodveshan*** **Group A** **Group B**	2.433+0.7279 2.367+0.6149	2.162 2.137	2.705 2.596	0.0564 Significant
6	**Hb Percentage** **Group A** **Group B**	2.518+0.218 2.541+0.687	2.542 2.431	2.781 2.612	0.045 significant

Reduction in all of the aforementioned *Garbhini Pandu* criteria; at the 5% level of significance, there was a significant difference in the scores for groups A and B (p-value less than 0.05). As a result, it can be said that treatments A and B are equally effective in raising the level of Hb % and decreasing subjective criteria.

Table 14: Overall effect of the therapy

Result	Group A		Group B	
	No. of Patients	%	No. of Patients	%
Good improvement (75 to 100 %)	35	87.5%	32	80%
Moderate improvement (50 to 75 %)	3	7.5%	4	10%
Mild improvement (25 to 50 %)	2	5%	3	7.5%
Poor improvement (0 to 25 %)	0	0%	1	2.5%

Within the *Ayaschurnadi yog* Group A, of 40 patients, 35 patients (87.5%) showed good improvement (75 to 100% relief), 3 patients (7.5%) showed moderate improvement (50 to 75% relief), and 2 patients (5%) showed mild improvement (25 to 50% relief).

Out of 40 patients in Group B of *Dhatri loha*, 32 patients, or 80%, showed good improvement (75 to 100% relief), 4 patients, or 10%, showed moderate improvement (50 to 75% relief), 3 patients, or 7.5%, showed mild improvement (25 to 50% relief), and 1 patient, or 2.5%, showed poor improvement (0 to 25% relief).

Discussion

Garbhini Pandu is prevalent among people below the poverty line, primarily due to inadequate diet and lifestyle practices (*'mithya ahara and vihara'*). Their diet is often frugal, unbalanced, and frequently contaminated with various pollutants. Additionally, families typically have a high number of children with short intervals between births. These factors collectively contribute to the incidence of *Garbhini Pandu* in this population.

In the present study, the trial drug is *Ayaschurnadi Yog*, which is indicated for the management of *Garbhini Pandu*. Each drug's effectiveness is due to its inherent constituents (*Dravya Prabhava*), properties (*Guna Prabhava*), and the combination of both (*Dravya-guna Prabhava*). Together, these elements act at a specified moment to provide a targeted mechanism and goal to a specific location.

Content and Mode of Action of *Ayaschurnadi Yog* is as follows

Ayasachurna (*Loha Bhasma*) is beneficial in increasing haemoglobin levels in anemia (Pandu). It possesses *balya* (energy-giving) and *pittaghna* (pacifying Pitta) properties, which contribute to alleviating the symptoms of pregnancy-induced anemia (*Garbhini Pandu*). Tila is sweet (*Madhur*) in taste, nourishing (*Rasatmak*), energy-enhancing (*Balya*), heavy (*Guru*), and unctuous (*Snigdha*), making it effective in reducing weakness (*Dourbalya*) associated with *Garbhini Pandu*. *Shunthi*, being pungent (*Katu*) and bitter (*Tikta*) in taste and having hot potency (*Ushna Virya*), helps in addressing digestive weakness (*Agnimandya*) in *Garbhini Pandu*. *Pippali* (Piper longum) exhibits properties like enhancing digestion (*Agnidipak*), aiding digestion (*Pachak*), and acting as a rejuvenator (*Rasayan*), which aid in reducing the symptoms of *Garbhini Pandu*. Marich(Piper nigerum) is Vata-pacifying (*Vatnashak*), pungent (*Katu*) in taste, and light (*Laghu*), thereby improving the digestive fire (*Agni*) of the patient. *Suvarnamakshik Bhasma* acts as a rejuvenator (*Rasayan*) and effectively increases haemoglobin levels. Lastly, *Madhu* (Honey), being synergistic (*Yogvahi*), enhances the efficacy of other drugs used in the preparation of Ayaschurnadi Yog, thus contributing to the relief of symptoms in *Garbhini Pandu.*

The clinical discussion revealed that the majority of patients in both groups were aged 26-30 years and predominantly exhibited *Vata-Pitta Pradhan prakriti*, aligning with the *doshic* vitiation commonly associated with *Pandu Vyadhi* (anaemia). Subjective assessments demonstrated that Group A consistently achieved better outcomes across all parameters compared to Group B. After treatment, Group A showed superior improvement in reducing *panduta* (pallor), alleviating *agnimandya* (digestive impairment), decreasing *daurbalya* (weakness), mitigating *hrudspandan* (palpitations), and relieving *pindikodveshtan* (calf muscle cramps).

Additionally, no adverse effects were noted with both the drugs. The results underscore the efficacy of Group A's intervention in addressing the symptoms of Garbhini Pandu, indicating enhanced therapeutic benefits.

Conclusion

Ayaschurnadi yog is more significant than *Dhatri loha* in the management of *Garbhini Pandu*. It reduces all the sign and symptoms of *Garbhini Pandu* like *Agnimandya*, *Dourbalya*, *Hrudspandan*, *Pindikodweshthan* etc and it also increases haemoglobin levels rapidly which is statistically significant. It can be concluded that *Ayaschurnadi yog* is safe and effective in *Garbhini Pandu* and does not show any side effects or untoward reactions in pregnancy. Thus, it can be safely given in *Garbhini Avastha*.

References

1. Derman, R.J., Goudar, S.S., Thind, S. *et al.* RAPIDIRON: Reducing Anaemia in Pregnancy in India—a 3-arm, randomized-controlled trial comparing the effectiveness of oral iron with single-dose intravenous iron in the treatment of iron deficiency anaemia in pregnant women and reducing low birth weight deliveries. *Trials* 22, 649 (2021). https://doi.org/10.1186/s13063-021-05549-2
2. https://pib.gov.in/PressReleasePage.aspx?PRID=1795421 accessed on 02.01.2025
3. Tiwari P.V Kashyap Samhita, Chaukhamba Prakashan Varanasi,2002, 192-193
4. Pandey Jaymini, Harit Samhita, Chaukhamba Vishvabharati, Varanasi, Trutiya khanda,2010, 51/1, 287
5. Charakaacharya, Charak Samhita, Charak chandrika Hindi commentary by Brahmanand Tripathi, reprint edition, Chaukhamba Sanskrit Pratishthan, 2007, Chikitsasthan 16,1003
6. Sharma Anant Ram, Sushrutaacharya, Sushrut samhita with sushrutavimarshini hindi commentary 12th edition, Chaukhamba Surbharati Prakashan 2012, 1/33, 21
7. https://www.nhm.gov.in/images/pdf/programmes/child-health/guidelines/Control-of-Iron-Deficiency-Anaemia.pdf accessed on June 14 2024
8. Tripathi Brahmanand, Charakcharya. Charak Samhita, Charak chandrika Hindi commentary . Reprint. Tripathi B, editor. Chaukhamba Sanskrit Pratishthan, 38 U.A., Jawahar Nagar Post Box No, 2113, Delhi 110007; 2007, 983
9. National Nutrition Monitoring Bureau. NNMB Micronutrient Survey. National Institute of Nutrition, Hyderabad, 2001, https://www.nin.res.in/downloads/NNMBREPORT2001, accessed on June 14 2024
10. Indian Council of Medical Research, Micronutrient Profile of Indian Population, New Delhi, 2004. [16] DLHS on RCH. Available from: http://www.rchindia.org/nr_india. htm 2006, accessed on June 14 2024
11. Konar H. D.C Dutta's textbook of obstetrics including perinatology and contraception. Kolkata, India: New Central Book Agency; 2011.
12. Govinddasvirachit, Bhaishjyaratnavali, Bhaishajya ratnakar,Ambika data shatri,Varanasi,Choukhamba Prakashan, reprinted 2018, Vol 1 34 /112
13. Dole V, Paranjpe P Textbook of Rasashastra, Edition 1 Varanasi, Chaukhamba Sanskrit Pratishthan Page no. 22
14. Govinda Dasji Bhaisajya Ratnavali, Bhisagratna, Vol II, Chaukhamba Sanskrit Sansthan, Varanasi, 1st Edition, 2006, 12/30.

*****