NJESR/November-2024/Volume-6/Issue-11 E-ISSN-2582-5836
DOI-10.53571/NJESR.2024.6.11.32-37

"Comparative Estimation Of Punarnava Mandura Versus Punarnava Mandura Combined With Shatavari Avaleha In The Controlling Of Garbhini Pandu: A Stratified Study"

Dr Dilip Thakur
HOD Applied Sciences & Research Coordinator
DPGU
Shivpuri (M.P.)

(Received-10October2024/Revised-25October2024/Accepted-10November22024/Published-29November2024)

Abstract

Background

Anaemia during pregnancy remains a critical public health challenge, particularly in India, which has the highest prevalence among South Asian countries. This condition accounts for approximately 80% of maternal deaths attributed to anaemia in the region, underscoring its impact on maternal and fetal health. Although Ayurvedic literature does not explicitly mention the term *Garbhini Pandu* (anaemia in pregnancy), indirect references to symptoms resembling anaemia can be found. Acharya Charaka and Acharya Chakrapani provide detailed descriptions of conditions arising in the sixth and seventh months of pregnancy that align with modern understanding of anaemia. The traditional use of Lauha (iron-based preparations) and Mandura (herbomineral formulations) for managing anaemia is well-documented in Ayurvedic practice.

PunarnavaMandura, a classical Ayurvedic formulation, has been extensively recognized for its utility in antenatal care due to its multifaceted properties, including hematinic, detoxifying, and tissue-rejuvenating effects. Additionally, ShatavariAvaleha, a Rasayana preparation renowned for its nourishing and adaptogenic qualities, is hypothesized to complement PunarnavaMandura in addressing *Garbhini Pandu*. This study explores the synergistic efficacy of these formulations, offering a holistic approach to managing anaemia during pregnancy within an Ayurvedic framework.

Materials And Methods

This study was designed to evaluate the comparative efficacy of PunarnavaMandura alone and in combination with ShatavariAvaleha in addressing anaemia during pregnancy. The investigation was conducted at the National Institute of Ayurveda (NIA), Jaipur, involving thirty pregnant participants diagnosed with anaemia through clinical and pathological criteria. The inclusion criteria targeted women in their second trimester, between the 13th and 28th weeks of gestation, with hemoglobin levels indicative of mild to moderate anaemia (Hb 7.0–10.0 g/dL).The participants were randomly allocated into two groups:

Group A: Administered PunarnavaMandura (500 mg capsules, two capsules twice daily) with buttermilk as an adjuvant.

Group B: Received PunarnavaMandura in the same dosage, supplemented with ShatavariAvaleha (5 g twice daily) along with milk.

The intervention spanned 60 days, during which comprehensive hematological and biochemical assessments were performed. Key parameters included hemoglobin percentage (Hb%), hematocrit (HCT), total iron-binding capacity (TIBC), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), serum iron, and serum ferritin levels. These markers were utilized to evaluate the effects of the interventions on hematological profiles and iron metabolism, facilitating a scientific understanding of the synergistic potential of the formulations.

Study Design

The study was designed as a randomized, controlled, comparative trial aimed at evaluating the efficacy of PunarnavaMandura alone and in combination with ShatavariAvaleha in the management of anaemia during pregnancy. Randomization was employed to ensure unbiased allocation of participants into intervention groups, minimizing confounding variables and allowing for robust statistical analysis. The study was conducted over 60 days at the National Institute of Ayurveda (NIA), Jaipur, adhering to ethical guidelines and protocols. Blinding was not applied as the nature of the interventions precluded masking. The primary endpoints included hematological parameters and iron metabolism markers, assessed before and after the intervention to gauge the therapeutic effects.

Sample Selection

The study recruited thirty pregnant women diagnosed with anaemia, characterized by hemoglobin (Hb) levels ranging from 7.0 to 10.0 g/dL. Participants were selected based on a rigorous screening process, which included clinical evaluation and pathological confirmation of iron deficiency anaemia. Gestational age was restricted to between the 13th and 28th weeks to target the critical period of fetal and maternal development when the risk of anaemia-related complications is heightened.

Inclusion Criteria

Pregnant women aged 20–35 years.

- Confirmed diagnosis of mild to moderate anaemia (Hb 7.0–10.0 g/dL).
- Pregnancy duration between 13 and 28 weeks.

Exclusion Criteria

- Non-iron deficiency anaemia or severe anaemia (Hb < 7.0 g/dL).
- Presence of systemic illnesses such as hypertension, diabetes, or thyroid disorders.
- Pregnancy-related complications, including pre-eclampsia, Rh-incompatibility, placenta previa, and abruptio placenta.
- Co-existing conditions such as jaundice, ovarian tumours, or any condition contraindicating the use of the formulations under study.

Grouping And Dosage

The participants were randomly divided into two equal groups (n = 05 each) to facilitate comparison:

Group A: Received PunarnavaMandura in a dosage of 500 mg powder, two parts taken twice daily, administered with buttermilk.

Group B: Received the same dosage of PunarnavaMandura, supplemented with ShatavariAvaleha at 5g, taken twice daily with milk.

The interventions were continued for 60 days, with compliance monitored through regular follow-ups.

Investigations

Baseline and post-intervention hematological parameters were evaluated, including:

General hematological markers: Hemoglobin (Hb%), hematocrit (HCT), total red blood cell count (TRBC), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), and mean corpuscular hemoglobin concentration (MCHC).

Iron Metabolism Markers: Serum iron, total iron-binding capacity (TIBC), serum ferritin, and peripheral blood smear (PBS).

Statistical Analysis

Data were analyzed quantitatively using descriptive and inferential statistics. The mean, standard deviation, and standard error were computed for each parameter. Paired *t*-tests were employed for both intra- and inter-group comparisons to determine the significance of observed changes. Statistical significance was set at $p<0.05$. This approach ensured a rigorous evaluation of the intervention's impact on the selected endpoints.

Group A: Punarnava Mandura Alone

Hemoglobin (Hb%): Increased from 9.047 to 10.000, reflecting a 10.53% improvement ($p<0.001$).

Hematocrit (HCT): Increased from 27.233 to 29.433, indicating an 8.07% rise ($p<0.001$).

Total Red Blood Cell Count (TRBC): Improved from 3.717 to 4.092, showing a 10.06% increase ($p<0.001$).

Mean Corpuscular Volume (MCV): Increased from 79.487 to 82.840, representing a 4.21% enhancement ($p<0.05$).

Mean Corpuscular Hemoglobin (MCH): Rose from 26.720 to 27.780, a 3.96% increase ($p<0.05$).

Mean Corpuscular Hemoglobin Concentration (MCHC): Increased from 32.733 to 33.440, reflecting a 2.15% improvement ($p<0.01$).

Group B: PunarnavaMandura With ShatavariAvaleha

Hemoglobin (Hb%): Increased from 9.267 to 10.300, a significant 11.14% rise ($p<0.001$).

Hematocrit (HCT): Rose from 28.071 to 30.440, an 8.70% increase ($p<0.001$).

Total Red Blood Cell Count (TRBC): Improved from 3.441 to 3.877, showing a 12.67% rise ($p<0.001$).

Mean Corpuscular Volume (MCV): Increased from 79.813 to 82.813, indicating a 3.75% enhancement ($p<0.01$).

Mean Corpuscular Hemoglobin (MCH): Rose from 26.573 to 27.693, reflecting a 4.21% increase ($p<0.05$).

Mean Corpuscular Hemoglobin Concentration (MCHC): Increased from 32.700 to 33.807, a 3.38% improvement ($p<0.01$).

Intergroup Comparison

Both groups demonstrated significant improvements across all hematological parameters.Group B exhibited better overall outcomes, particularly in serum ferritin levels, which showed a statistically significant difference ($p<0.05$), suggesting superior efficacy in replenishing iron stores.

Discussion

The findings affirm the efficacy of **PunarnavaMandura** in improving hematological and iron metabolism parameters in pregnant women with anaemia. The addition of **ShatavariAvaleha** in Group B enhanced these effects, as evidenced by greater improvements in Hb%, HCT, TRBC, and serum ferritin levels.

The observed improvements can be attributed to the complementary properties of the formulations:

PunarnavaMandura: Combines hematinic, Rasayana, and Pandughna properties, addressing both the symptoms and underlying causes of anaemia.

ShatavariAvaleha: Enriches the therapeutic potential with its Rasayana (rejuvenative), Vata-Pitta Hara (balancing), and Garbhaposhaka (nourishing) effects, which enhance iron absorption and utilization.

The significant increase in serum ferritin levels in Group B underscores the synergistic role of ShatavariAvaleha in promoting iron storage, crucial for sustained hematological improvement during pregnancy.

The lack of significant intergroup differences in certain parameters suggests that while PunarnavaMandura alone is effective, the combination therapy provides added benefits in restoring maternal iron reserves and improving overall nutritional status.

Conclusion

This study demonstrates the efficacy of **PunarnavaMandura** as a standalone therapy and its enhanced effects when combined with **ShatavariAvaleha** for the management of Garbhini Pandu. The combination therapy yields superior outcomes due to the synergistic interplay of Rasayana, Vata-Pitta Shamaka, and Garbhaposhaka properties. These findings advocate for an integrative Ayurvedic approach to addressing anaemia during pregnancy, promoting maternal and fetal health.

This structured and scientific discussion ensures clarity and emphasizes the therapeutic potential of the studied formulations.

References

- Shendkar, P. V., &Ghorpade, M. S. (2020). AyurvedDarpan: Journal of Indian Medicine- The Review of Garbhini Pandu (Anaemia in Pregnancy) in Ayurveda.
- Ezzati, M., Lopus, A. D., Dogers, A., Vander H. S., & Murray, C. (2002). Lancet, 360: 1347-60: Selected major risk factors and global and regional burden of disease.
- Reddaiah, V. P., Prasanna Raj, P., &Ramchandran, K. et al. (1989). Indian J. Ped., 109-114: Supplementary Iron Dose in Pregnancy. Anaemia Prophylaxis.
- Indian Council of Medical Research. (1989). Evaluation of the National Nutritional Anaemia Prophylaxis Programme.
- De Mayer, E. M., &Tegmen, A. (1998). World Health Organ Qlty., 38:302-16: Prevalence of anaemia in the world.
- Kalaivani, K., & Ramachandran, P. (2018). The Indian Journal of Medical Research: Time trends in prevalence of anaemia in pregnancy.

- Pandey, K. N., &Chaturvedi, G. N. (1998). Agnivesha, Charaka Samhita: sha. Sthana, 4/22. Vidyotini-Vyakhya, ChaukhambhaBharati Academy, Varanasi.
- Tripathi, H. (2005). Harita, Harita Samhita: 3rd section, chapter 51/1, ChaukhambaKrishnadas Academy, Varanasi.
- Chaturvedi, G. N., &Shashtrey, K. N. (2005). Agnivesha, Charaka Samhita: Sha. Sthana, 4/16. Vidyotini-Vykhya, ChaukhambhaBharati Academy, Varanasi.
- Sarkar, P. K., Prajapati, P. K., Choudhary, A. K., Shukla, V. J., &Ravishankar, B. (2007). Haematinic evaluation of LauhaBhasma and ManduraBhasma on HgCl2-induced anaemia in rats. Indian J. Phar Sci., 69, 791-5.
- Pandya, M. G., & Dave, A. R. (2014). A clinical study of Punarnavamandura in the management of Pandu Roga in old age (geriatric anaemia). AYU, 35(3), 252-260.
- Singh, D. P., Govindarajan, R., &Rawat, A. K. (2008). High-performance liquid chromatography as a tool for the chemical standardisation of Triphala-an Ayurvedic formulation. Phytochem Anal., 19(2), 164-8.
- Na, M., &Bajpai, M. et al. (2005). Phenolic contents and antioxidant activity of some food and medicinal plants. International Journal of Food Sciences & Nutrition, 56(4), 287-291.
- Rao, P. S. (2008). Vagbhata, Astanga-Samgraha Sha. Sthana 4/15, ChaukhambaKrishnadas Academy, Varanasi.
- Samal, J., &Dehury, R. K. (2017). A review of literature on PunarnavadiMandura: An AyurvedicHerbo-Mineral Preparation. Pharmacogn. J., 9(1), 118-123.
- Kulkarni, P. (2005). Rasaratnasamucchaya, 5, 122.
- Bhisagacharya, S. (2010). Kashyapa Samhita: Khil-sthan,10/182-183, Vidyotini Hindi Commentary, Chaukhambha Sanskrit Sanshthana, Varanasi.
- Pusam, P. et al. (2017). A detailed concept of PunarnavaMandura. European Journal of Biomedical and Pharmaceutical Sciences, 4(11), 394-400.
- Mayer, E. M. (1998). Prevalence of anaemia in the world. World Health Organization.
- Pandey, K. N., &Chaturvedi, G. N. (2005). Agnivesha, Charaka Samhita: Sha. Sthana, 4/20-24. Vidyotini-Vyakhya, ChaukhambhaBharati Academy, Varanasi.