Pharmaceutical preparation of *Saubhagya Shunthi Churna*: A herbal remedy for puerperal women

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**ABSTRACT**

**Background:** In the last few decades, there has been exponential growth in the field of herbal remedies. Pharmacopoeial preparations like *avleha or paka* (semi-solid), *swarasa* (expressed juice), *kalika* (mass), *him* (cold infusion) and *phanta* (hot infusion), *kwatha* (decoction) and *churna* (powder) form the backbone of Ayurvedic formulations. Newer guidelines for standardization, manufacture, and quality control, and scientifically rigorous research will be necessary for traditional treatments. This traditional knowledge can serve as a powerful search engine that will greatly facilitate drug discovery. **Purpose:** The aim of the present study is to standardize *Saubhagya Shunthi Paka* in *churna* (powder) form. The powder form makes this traditional drug more stable for long-term storage and hence, easier to preserve.

**Materials and Methods:** *Saubhagya Shunthi Paka* is an ayurvedic formulation containing *Shunthi* (*Zingiber officinalis*) as one of its chief ingredients. The basic preparation of this drug is a semisolid. We checked the microbial load and nutrient values (using International Standard IS and Association of Official Analytical chemists AOAC methods).

**Results:** The powdered form of *Saubhagya Shunthi Churna* yielded a weight loss of approximately 17.64% of the total weight of ingredients. The total energy of *Churna* (calculated based on nutrient content) was found higher over *Paka*. **Conclusion:** *Saubhagya Shunthi Churna* may be a good therapeutic and dietary medicine for Indian women, which may be easily prepared at home.

**Key words:** Ayurveda, *Churna* (powder), *saubhagya shunthi paka*, *paka* (semi-solid), puerperium

**INTRODUCTION**

Ayurveda, the herbal-based system of medicine is now well recognized not only in India, but also in the Western world. With the growing need for safer drugs, attention has been drawn to the quality, efficacy, and standards of Ayurvedic formulations.[1] In India, Ayurveda involves the eight principal branches of medicine: Pediatrics, gynecology, obstetrics, ophthalmology, geriatrics, otolaryngology, general medicine, and surgery. During the past few decades, there has been a growing recognition of reproductive health issues particularly, in women. Every year, at the global level, some eight million women suffer pregnancy-related complications and over half a million die, 99% of them in the developing countries.[2] Problems that are specific to women’s reproductive process can be divided into two. Firstly, problems occurring during pregnancy, delivery, and the puerperium, referred to in the medical literature as obstetric (maternal) morbidity. Secondly, problems occurring with nonpregnant women and outside the puerperal period of six weeks, known as gynecological morbidity.[3] Women’s health is a basic need for society as it affects the progeny. A woman who has just given birth to a baby along with the placenta is called “*Sutika*” in Ayurveda. During puerperium, the woman faces many problems like fever, diarrhea, edema, colic pain, abdominal distension, loss of strength, drowsiness, anorexia, delirium, and other diseases that are caused by the vitiation of *vata* as well as *vata* which appear during puerperium. The classical concept of Ayurveda defines the ways to maintain ‘*Vata*’, ‘*Pitta*,’ and ‘*Kapha*’ in a balanced state to prevent diseases.[4] These are difficult to cure because of the decrease in muscle tissue and strength in women during the puerperal period. Diseases associated with the puerperal period are called *Sutika Roga* (puerperal diseases).[5]

Ayurveda mentions specific drugs that are given for a definite duration along with specific dietetic regimens for puerperal women. *Saubhagya Shunthi Paka* is an Ayurvedic herbal formulation containing *Shunthi* as the chief ingredient. It alleviates anxiety, stress and is a natural pain reliever known to contain about 17 crude drugs.[6]

**Soubhagya shunthi churna: An overview**

Ayurveda uses various formulations such as solid dosage forms (pills, powders), liquid dosage forms (*asavas, arishtas*), and semisolid dosage forms (*ghritas, avlehas, and paka*).
Pharmacopoeial preparations like swarasa (expressed juice), kalka (mass), him (cold infusion) and phanta (hot infusion), kwatha (decoction), and Churna (powder) form the backbone of Ayurvedic formulations.\(^7\) Paka is a semisolid preparation of drugs prepared by the addition of jaggery or sugar.\(^4\)

Saubhagya Shunthi Paka is a classical preparation from the Ayurvedic text, “Yoga Ratnakar.” It is a very useful drug for puerperal women because it contains all the nutrients which are required during this period and can be easily prepared at the home. The combination of Saubhagya Shunthi Paka with Dashamoolarishta has a potent effect on postpartum women by helping to fulfill their body requirements and to restore their bodies to normalcy. It is known to improve digestion and relieves debility following delivery. It works well as a postnatal tonic and facilitates normal involution of the uterus, besides enhancing the production of milk.

Saubhagya Shunthi Paka, is appropriate to review is not very well known it, but because of its usefulness this traditional drug. As the paka preparation cannot be stored for long periods, we have formulated it in the Churna form, which retains the same qualities but can be preserved for longer periods. Thus, the formulation can be manufactured in large scale to be marketed as an Ayurvedic medicine.

Saubhagya Shunthi Paka consists of 17 herbal ingredients including, which have their individual health promotive effects; and their roles in puerperium have been discussed below:

- Goghrita (cow’s ghee)
- Khoya (concentrated milk)
- Sita (jaggery) (Saccharum officinarum)
- Shunthi (Zingiber officinale)
- Mishriya (Foeniculum vulgare)
- Mustaka (Cyperus rotundus)
- Javitri (Myristica fragrans)
- Krishna-jeeraka (Bunium persicum)
- Sweta-jeeraka (Cuminum cyminum)
- Nagkeshar (Mesua ferra)
- Marica (Piper nigrum)
- Dhanayaka (Coriandrum sativum Linn.)
- Pippali (Piper longum)
- Indrjaua (Holarrhena antidysenterica)
- Vidang (Embelia ribes)
- Tejpatra (Cinnamomum tamala)
- Ela (Elattaria cardamom)

The objective of the present study was to develop a more stable churna formulation by using the same traditional medicinal herbs.

**Materials and Methods**

**Estimation of moisture content routine procedure**

The moisture content of the raw materials used in preparation of the Saubhagya Shunthi was estimated as follows:

1. Weights of raw material samples and weights of Petri-plates were taken separately.
2. The fresh samples were taken in the Petri-plates.
3. The Petri-plates were incubated in the oven for 24 hours at 105°C.
4. The samples were removed from the oven and cooled to room temperature.
5. Again the weights of the raw material along with the Petri-plates were measured.

Moisture content was calculated by using the formula

\[
\text{Moisture content} = \frac{\text{Weight of oven-dried sample} \times 100}{\text{Weight of oven-dried sample} - \text{Weight of raw material}}
\]

**Preparation of Saubhagya shunthi churna**

All the raw materials required for the preparation were weighed in grams [Table 1] and powdered separately in a pulverizer and then weighed again.

1. Khoya was taken in a vessel and heated with “Madhyanagni” (medium intensity fire) with the addition of a little Goghrita until it became brown in color.
2. Goghrita was taken in another vessel and mixed with the powder of Shunthi before frying the preparation properly.
3. All the Praksheya Dravya drugs were taken in their powdered forms, i.e., Khand (jaggery), Mishrya (Foeniculum vulgur), Dhanayaka (Coriandrum sativum), Vidanga (Embelia ribes), Maricha (Piper nigrum), Swetajeeraka (Cuminum cyminum), Krishnajeeraka (Nigella sativa), Javitri (Myristica fragrans), Pippali (Piper longum), Ela (Elattaria cardamom), Tejpatra (Cinnamomum tamala), Nagkeshar (Mesua ferra), Indrjaua (Holarrhena antidysenterica), Musta (Cypurus rotundus) along with the fried Khoya (condensed milk) and fried “Shunthi preparation”.
4. All the contents were properly mixed to obtain Saubhagya Shunthi Churna.

**Assessment of nutritive value of churna and paka preparations of Saubhagya shunthi**

The samples of both the forms (Churna and Paka) of the drug were sent to the ‘Regional food and Research Analysis Centre, Lucknow’, where certain tests were performed to investigate their nutritional value. They used the ‘IS method’ and ‘AOAC Method’ as follows:

- Calculation of Total Energy = (Estimated value of Protein × 4) + (Estimated value of Fat × 9) + (Estimated value of Carbohydrate × 4)

**Shelf-life analysis of Saubhagya shunthi churna and paka**

This test was performed to check the microbial load of both the samples in our own laboratory. The samples were incubated in Yeast Extract Mannitol (YEM) medium for 36 hours along with plain YEM medium as a control.
RESULTS

The color of Shunthi was yellowish at the start and during the process and became brown after completion of the process. The weight loss of the ingredients after pulverizing into the powder form was 12.7% [Table 2]. Shunthi absorbed almost the entire amount of Goghrita at the start.

When all the contents were mixed with the fried condensed milk and the Shunthi fried with Goghrita, the final preparation of the drug was observed to be brown in color.

The total weight loss of the drug during the final preparation was 17.64% (this means that 4.94% of the weight loss was recorded during the formulation of the drug) [Table 3]. Moisture content of Pippali was found to be the highest (3.55) whereas it was the lowest in Krishna jeeraka (1.49). The moisture content of two ingredients showed negative values: −6.00 and −2.85 for Vidang and Tejpatra respectively [Table 4].

The total energy of Churna (489.0 Kcal/100 g) was higher than that of Paka (426.0 Kcal/100 g) because the carbohydrate value of Churna is 41 g more than that of Paka. Calcium content was approximately the same for both preparations whereas iron and protein were higher in Churna in comparison with Paka [Table 5].

In the shelf-life, we found no contamination in either of the samples. (Churna preparation was two years old, the Paka was only four months old) [Figure 1].

DISCUSSION

Ayurveda is practised widely in India, Sri Lanka, and other countries, and has a sound philosophical and experiential basis.[26,27] Atharvaveda (around 1200 BC), Charak Samhita, and Sushrut Samhita[28] (1000-500 BC) are the main classics that give a detailed description of over 700 herbs. Today the Government of India has formed stringent to regulate issues related to quality, safety, efficacy, and practice of herbal medicine.[29] With a unique holistic approach, Ayurvedic medicines are usually customized to the individual’s constitution.[30]

Standardization and development of reliable quality protocols for Ayurvedic formulations using modern techniques of

### Table 1: Ingredients of Saubhagya shunthi churna

| Materials         | Weight (g) |
|-------------------|------------|
| Cow’s ghee        | 1000       |
| Khoya             | 1000       |
| Khand             | 2500       |
| Shunthi           | 450        |
| Mishreya          | 250        |
| Dhanyaka          | 150        |
| Vidanga           | 50         |
| Maricha           | 50         |
| Swetajeeraka      | 50         |
| krishnajeeraka    | 50         |
| Javitri           | 50         |
| Pippali           | 50         |
| Ela               | 50         |
| Tejpatra          | 50         |
| Nagkeshar         | 50         |
| Indrajau          | 50         |
| Musta             | 50         |

### Table 2: Weight loss of ingredients during grinding of herbs

| Name of ingredients | Initial weight (g) | Final weight (g) | Loss of weight (g) |
|---------------------|--------------------|------------------|--------------------|
| Shunthi             | 450                | 425              | 25                 |
| Mishreya            | 250                | 220              | 30                 |
| Dhanyaka            | 150                | 110              | 40                 |
| Vidanga             | 50                 | 45               | 5                  |
| Maricha             | 50                 | 45               | 5                  |
| Swetajeeraka        | 50                 | 40               | 10                 |
| krishnajeeraka      | 50                 | 45               | 5                  |
| Javitri             | 50                 | 40               | 10                 |
| Pippali             | 50                 | 45               | 5                  |
| Ela                 | 50                 | 47               | 3                  |
| Tejpatra            | 50                 | 35               | 15                 |
| Nagkeshar           | 50                 | 40               | 10                 |
| Indrajau            | 50                 | 35               | 15                 |
| Musta               | 50                 | 40               | 15                 |
| Total powdered herbs| 1400               | 1212             | 188                |

### Table 3: Total loss of weight of ingredients during preparation of drug

| Name of ingredients | Initial weight (g) | Final weight (g) | Loss of weight (g) |
|---------------------|--------------------|------------------|--------------------|
| Powdered herbs      | 1400               | 1212             | 188                |
| Condensed milk      | 1500               | 1000             | 500                |
| Cow’s butter        | 1000               | 1000             | 0                  |
| Total               | 3900               | 3212             | 688                |

Figure 1: shelf-life study of Saubhagya shunthi churna and paka after 36 hour incubation
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### Table 4: Total loss of moisture content of ingredients

| Sample         | Wt. of FS (g) | Wt. of PP (g) | Wt. of ODS (g) | Moisture content (%) |
|----------------|---------------|---------------|----------------|----------------------|
| Shunthi        | 29.44         | 47.67         | 75.2           | 2.539894             |
| Marica         | 29.89         | 47.56         | 75.2           | 3.38353              |
| Dhania         | 12.01         | 41.52         | 58.85          | 5.459792             |
| Indrajau       | 12.36         | 38.73         | 59.29          | 1.599774             |
| Jeera          | 10.64         | 33.64         | 43.61          | 1.535345             |
| Krishna jeeraka| 12.01         | 50.59         | 61.68          | 3.493569             |
| Soufa          | 14.16         | 36.56         | 49.35          | 2.776809             |
| Motha          | 18.09         | 41.81         | 58.51          | 2.375662             |
| Ila            | 19.28         | 36.6          | 47.74          | 3.05069              |
| Nageshthri     | 11.22         | 38.23         | 48.56          | 1.832794             |
| Pippali        | 15.85         | 40.48         | 54.4           | 3.547794             |
| Vidang         | 10.01         | 44.36         | 57.63          | 2.8932               |
| Tejpatra       | 4.49          | 15.96         | 21.05          | 2.85936              |
| Javatri        | 5.72          | 15.96         | 21.19          | 2.32412              |

Weight of fresh sample (raw material used in drug preparation) - Wt. FS; Weight of Petri-plates - Wt. PP; Weight of oven dry sample - Wt. ODS

### Table 5: Estimation of nutritive value of Saubhaguya Shunthi Paka and Churna: A comparative analysis

| Nutrients          | Saubhagya Shunthi Paka (delivery/per gram) | Saubhagya Shunthi Churna (delivery/per gram) |
|--------------------|-------------------------------------------|---------------------------------------------|
| Iron               | 10.5 mg                                   | 17.04 mg                                    |
| Protein            | 6.8 g                                     | 7.15 g                                      |
| Fat                | 25.7 mg                                   | 14.11 mg                                    |
| Carbohydrate       | 47.5 g                                    | 83.5 g                                      |
| Calcium            | 212.02 mg                                 | 211.39 mg                                   |
| Vitamin B₁         | 0.5 mcg                                   | 0.5 mcg/100 g                               |
| Total Energy       | 426.0 Kcal                                | 489.6 Kcal/100 g                            |

The design of a new drug necessitates the study of the effects of a drug. Thus, the clinical benefits of this ayurvedic drug over standard therapy should be extremely convincing. Hence, there is a need for further study to evaluate the effects of the drug by a case control study and to elucidate its complete mechanism of action.

## Conclusion

Saubhagya Shunthi can be prepared in both forms, i.e., churna (Powder) and paka (semisolid). Although both preparations show the same effect in Sutika Kala, the churna can be seen to be better than the paka form due to its longer shelf-life and comparatively higher total energy. Saubhagya Shunthi Churna may be a good therapeutic and dietary medicine for Indian women, which may be prepared at home easily. This traditional formulation can provide novel insights into the drug discovery and development process. This drug can be useful for the pharmaceutical companies searching for economically valuable natural products.

### References

1. Agarwal S, Singh RH. Proceedings of International Congress, Ayurveda, 28-30th January 2002. p. 209-21.
2. World Health Organization [WHO]. Beyond the numbers: Reviewing maternal deaths and complications to make pregnancy safer. Geneva, Switzerland, WHO; 2004. p. 150.
3. AbouZahr C. Global burden of maternal death and disability. Br Med Bull 2003;67:1-11.
4. Jadhav AN, Bhutani KK. Ayurveda and gynecological disorders. J Ethnopharmacol 2005;97:151-9.
5. Kashyap BD. Diagnosis and Treatment of Puerperal Diseases. In: Five Specialized Therapies of Ayurveda (Panch Karma) 1992. p. 51.
6. Shastri VL. Sutika Roga Chikitsa, Uttarardha. In: Yoga Ratnakar. 2nd ed. The Chowkhamba Sanskrit Series of Varanasi; 1973. p. 249.
7. Singh A. Ayurvedic Pharmaceutical Sciences-Challenges Ahead. Ethnobotanical Leaflets 2008;12:607-8.
8. Chaturvedi S. Ayurveda-Indepth Vegetarianism. In: Role of Vegetarian Diet in Health and Disease 2009:1:51.
9. Mark AP. Your milk Supply. In: The Complete Idiot’s Guide to Breastfeeding. Published by Alpha Books; 2000. p. 142.
10. Pole S. Plant Profiles. In: Ayurvedic Medicine: The Principles of Traditional Practice. Published by Elsevier Health Sciences; 2006. p. 228.
11. Wiart C. Plants affecting the central nervous system. In: Ethnopharmacology of medicinal plants: Asia and the Pacific. Humana Press; 2006. p. 98.
12. Ramadan MF. Nutritional value, functional properties and nutraceutical applications of black cumin (Nigella sativa L.): An overview. Int J Food Sci Technol 2007;42:1208-18.
13. Parekh J, Chanda SV. Antibacterial Activity of Aqueous and Alcoholic Extracts of 34 Indian Medicinal Plants against Some Staphylococcus Species. Turk J Biol 2008;32:63-71.
14. Parekh J, Chanda S. In vitro antifungal activity of methanol extracts of some Indian medicinal plants against pathogenic yeast and Moulds. Afr J Biotechnol 2008;7:4349-53.
15. Lin RI. Pharmacological properties and medicinal use of pepper (Piper nigrum L.). Dev-food-sci 1994;34:469-81.
16. Chaudhry NM, Tariq P. Bactericidal activity of black pepper, bay leaf, aniseed and coriander against oral isolates. Pak J Pharm Sci 2006;19:214-8.
17. Emamghoreishi M, Khasaki M, Aazam MF. Coriandrum sativum: Evaluation of its anxiolytic effect in the elevated plus-maze. J Ethnopharmacol 2005;96:365-70.
18. Pullalah T. In: Encyclopaedia of World Medicinal Plants. Daya Books; Vol. 4. 2007. p. 1543.
19. Brown HC. Holarrhena antedysenterica. Br Med J 1992;306:903-10.
20. Ahmad I, Mehmoon Z, Mohammad F. Screening of some Indian medicinal plants for their antimicrobial properties. J Ethnopharmacol 1998;62:183-93.
21. Ballal M, Srujan D, Bhat KK, Shirwaikar A, Shivananda PG, et al. Antibacterial activity of Holarrhena antedysenterica (Kurchi) against the enteric pathogens. Indian J Pharmacol 2001;33:392-393.
22. Chakraborty A, Brantner AH. Antibacterial steroid alkaloids from the stem bark of Holarrhena pubescens. J Ethnopharmacol 1999;68:339-44.
23. Raghu AV, Geetha SP, Martin G, Balachandran I, Ravindran PN, et al. Direct shoot organogenesis from leaf explants of Embelia ribes Burm. a vulnerable medicinal plant. Acta Physiologica Plantarum 2007;29:455-61.
24. Anon. The wealth of India-raw materials. National Institute of Science Communication, CSIR. New Delhi, India: 2002. p. 74-5.
25. Chopra VL, Peter KV. cardamom. In: Handbook of Industrial Crops. Haworth Press; 2005. p. 72.
26. Dahanukar S, Thatre U. Ayurveda Revisited. Popular Prakashan; Mumbai, 3rd ed. 2000.
27. Chopra A, Doiphode V. Med Clin North Am 2002;86:75-89.
28. Dash B, Shrama BK. Charak Samhita. 7th ed. Varanasi (India): Chaukhamba Sanskrit Series; 2001.
29. National Policy on Indian Systems of Medicine and Homoeopathy-Ministry of Health and Family Welfare, Government of India. Available from: http://www.indianmedicine.nic.in. [last assessed on 2002].
30. Patwardhan B. Ayugenomics: Integration for customized medicine. Indian J Nat Prod 2003;19:16-23.
31. Elamthuruthy AT, Shah CR, Khan TA, Tatke PA, Gabhe SY. Standardization of marketed Kumariasava-An Ayurvedic Aloe vera product. J Pharm Biomed Anal 2005;37:337-41.
32. Devi M. Quality Control and assurance of India Medicines. Health Administrator Available from: http://medind.nic.in/haa/t07/i1/haat07i1p21.pdf. [last cited on 2009 Aug 20].
33. Suthar AC, Banavalikar MM, Biyani MK. A review on ginger (Zingiber officinale): Pre-clinical and clinical trials In J Tradit Knowl 2003;2:62-8.
34. Chapter in a book: Avaleha or Leha and Pāka. In: Ayurvedic Formulary of India. 2nd ed. The Controller of Publication (Civil Lines, Delhi); 2003. p. 31.

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