



Pharmaceutico-Analytical Study of Madhukadi Sadhit ksheera (An Herbal Medicine Processed Milk)

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ABSTRACT

Madhukadi sadhit ksheera is an Ayurvedic preparation mentioned as treatment for Garbhashosha ((Fetal Growth Restriction). There is a lack of data regarding the standardization of pharmaceutical process and analytical profile of Madhukadi sadhit ksheera. To prepare Madhukadi sadhit ksheera and analyse it using various physicochemical parameters. Madhukadi sadhit ksheera was prepared as per the guidelines mentioned in Ayurvedic Pharmacopoeia of India. During the pharmaceutical procedure, all the ingredients were powdered and mixed thoroughly. The pharmaceutical and analytical parameters were compiled, and data was recorded. The values of physicochemical parameters of Madhukadi sadhit ksheera were as follows: pH 6.27, specific gravity 1.052, Viscosity Ostwald 1.43 cP, total Solid content 17.67 % revealed. HPTLC finger printing shows @254 nm 9, @366 nm 11, @540 nm 12 different actives principles. Data generated from pharmaceutical, analytical studies and TLC can be used to develop a preliminary standard profile for the formulation Madhukadi sadhit ksheera.

Key Words: Madhukadi Sadhit ksheera, Garbhashosha

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INTRODUCTION

Madhukadi sadhit ksheera is an Ayurvedic preparation mentioned as treatment for Garbhashosha ((Fetal Growth Restriction) (1 & 2). This is a typical combination of drugs to combat the disease Garbhashosha. The combination of Yastimadhu (*Glycyrrhiza glabra*), Kashmari (*Gmelina arborea*), Sita (*Saccharum officinarum*) and Ksheera (Milk) are capable to overcome the disease Garbhashosha ((Fetal Growth Restriction). In this formulation Yashtimadhu(3) act as Brahniya and due to guru, snigdha and madhura guna it is Vataghna and Kashmari (Gambhari)(4) act as Daurbalyahara, Vatapittaghna, Sita act as Ruchya (improves taste) balances Vatapitta (5), Ksheera act as rasayana.(6) Pharmaceutical study deals with the study of drug manufacturing. As like healing drug manufacturing too is an art. In treating the disease, the first and foremost thing is preparation of the drug should be proper. Drug standardization mainly projected to guarantee the quality, efficacy, and consistency of the final product.(7)

AIMS AND OBJECTIVES

1. To develop Standard Manufacturing Procedure of Madhukadi sadhit ksheera
2. To develop analytical profile of Madhukadi sadhit ksheera.

MATERIAL AND METHODS

Collection of Raw Materials (Table 1, Figure 1)

The raw materials were collected:

1. Yashtimadhu: 10 kg were collected from Jamnagar Gujarat.
2. Kashmari 10 kg was collected from Pune, Maharashtra.
3. Sita collected from Vadodara Gujarat.
4. Fresh cow's milk collected from Vadodara Gujarat.

Authentication of Raw Materials

Herbal drugs (Yastimadhu(8), Kashmari(9)) are Authenticated as per API Standards in Department of Dravyaguna, Parul Institute of Ayurved, Parul University Vadodara Gujarat.

Place of Drug preparation

Teaching pharmacy, Department of Rasashastra and Bhaishajya Kalpana, Parul Institute of Ayurved, Parul University Vadodara Gujarat.

Pharmaceutical study

Coarse Powder of 10 to 40 no. is prepared in pulveriser from raw materials (Yastimadhu, Kashmari) and homogeneous mixture was prepared. Sita in converted in to fine powdered and stored in air tight container. Madhukadi Sadhit Ksheera is prepared from herbal ingredients, milk and water using 1:15:15 proportion (10). 10 grams of sugar is dissolved in siddha milk.

Analytical Study

Organoleptic parameters and Physico-chemical parameters pH, specific gravity, viscosity Ostwald, total Solid content, HPTLC finger printing and microbial load of Madhukadi Sadhit Ksheera were carried out at Vasu Research Centre Vadodara Gujarat.

RESULTS

Organoleptic characters, Physicochemical characters, Microbiological estimation results are shown in table 2, 3 and 4. HPTLC fingerprinting was shown in figure 2 and Table 5.

Table 1: Showing ingredients and composition of Madhukadi Sadhit Ksheera.

SN	Ingredient	Latin name	Part used	Composition	
1	Yastimadhu	<i>Glycyrrhiza glabra</i>	Root	1 Part	10 gms
2	Kashmari	<i>Gmelina arborea</i>	Fruit	1 Part	10 gms
3	Sita	<i>Saccharum officinarum</i>	-	1 Part	10 gms
4	Milk	--	-	45 Part	450 ml
5	Water	--	-	45 Part	450ml

Table 2: Showing the organoleptic characters of Madhukadi Sadhit Ksheera

Sr no	Characters	Result
1	Roopa (color)	Brown cultured
2	Odour	Characteristic
3	Taste	Characteristic

Table 3- Physico-chemical Analysis

S. No.	Parameters	Milk	Final Product
1	pH	6.7 to 6.9	6.27
2	Specific gravity	1.028 to 1.032	1.052
3	Viscosity Ostwald	1.765 to 1.785	1.43 cP
4	Total Solid content	13 %	17.67%

Table 4- Microbiological Analysis

Sr. No.	Parameter	Results	Limit as per API
1	Total Microbial Plate Count (TPC)	59 cfu/g	10⁵ cfu/g
2	Total Yeast & Mould count	Absent	10³ cfu/g
3	<i>Staphylococcus aureus</i>	Absent	Absent/g
4	<i>Salmonella sp.</i>	Absent	Absent/g
5	<i>Pseudomonas aeruginosa</i>	Absent	Absent/g
6	<i>Escherchian coli</i>	Absent	Absent/g

Table 5: Madhukadi Sadhit Ksheera HPTLC Chromatogram R_f value

Spot no	Track T1@540 nm	Track T1@ 366nm	Track T1@254 nm
1	0.07	0.07	0.16
2	0.16	0.16	0.34
3	0.20	0.20	0.43
4	0.34	0.34	0.50
5	0.43	0.43	0.60
6	0.45	0.50	0.69
7	0.50	0.60	0.76
8	0.60	0.69	0.78
9	0.69	0.76	0.82
10	0.76	0.82	-
11	0.82	0.89	-
12	0.95	-	-

Figure 1: Images of drugs and final product Madhukadi Sadhit Ksheera

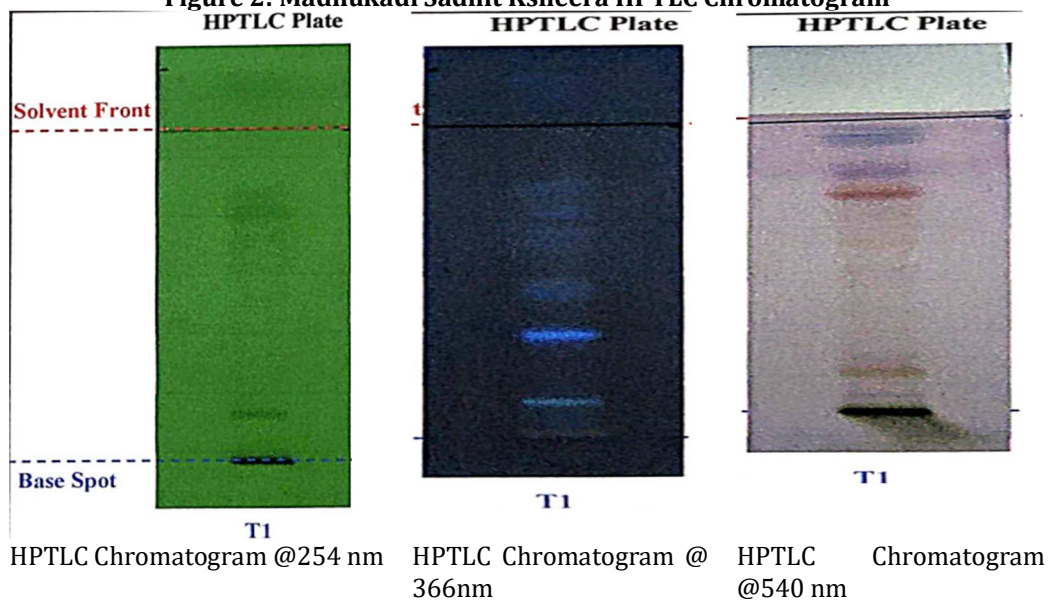


Yashtimadhu Coarse Powder

Gambhari Beeja and its Coarse Powder

Final Product : Madhukadi Sadhit Ksheera

Figure 2: Madhukadi Sadhit Ksheera HPTLC Chromatogram



HPTLC Chromatogram @254 nm

HPTLC Chromatogram @ 366nm

HPTLC Chromatogram @540 nm

DISCUSSION

Madhukadi Sadhit Ksheera is ksheerapaka kalpana which contents Yashtimadhu and Gambhari like dravyas to treat Garbhashosha. Charaka has mentioned that if due to vitiation Vayu, the fetus gets dried or child gets emaciated then for growth and development of this, the milk prepared with sita, Kashmari and Yashtimadhu can be used(11). As a part of standardization of the drugs, may it be the raw drug, in process drugs or the finished product; the analytical parameters are to be tested and logical reasoning has to be given. Here for the Madhukadi Sadhit Ksheera the analytical studies performed and noted are Organoleptic characters, pH, specific gravity, viscosity Ostwald, total Solid content, HPTLC finger printing and microbial load. pH of milk changes from 6.7 to 6.9 to 6.27 which indicates transfer of some acidic materials from Yashtimadhu and Gambhari. Increased in the total solid contents of milk indicate that some constituent from Yashtimadhu and Gambhari are transferred into the milk during the process of Ksheerapaka. It is in accordance with increase in the specific gravity of milk after the Ksheerapaka kalpana. It further supports the transfer of some solid constituents from Yashtimadhu and Gambhari which indicated from total solid content and specific gravity. Increase in specific gravity and total solid content will ultimately increases the viscosity of any liquid. The same is observed in Madhukadi Sadhit Ksheera. Total microbial analysis indicates that madhukadi sadit ksheera is free from microbial contamination. Its due to the proper care taken during the collection of raw material, preparation of coarse powder and preparation of ksheerapaka. HPTLC Fingerprinting may serve as preliminary standard for further research works on Madhukadi Sadhit Ksheera.

CONCLUSION

Madhukadi Sadhit Ksheera is one of the few formulations recommended for Garbhashosha. It is very easy to prepare even at home and cost effective also. It can be supplied as dietary item in Garbhashosha. Physico-chemical analysis helps to generate a preliminary standard analytical profile for Madhukadi Sadhit Ksheera as there is no standard for Madhukadi Sadhit Ksheera is available in the pharmacopoeia. So, data generated by this study can be used as reference for the identity and purity of the formulation Madhukadi Sadhit Ksheera.

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