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A PHARMACOGNOSTICAL AND PHYSICO-CHEMICAL EVALUATION OF *JEEVANIYA VATI* IN THE MANAGEMENT OF *VANDHYATVA* (FEMALE INFERTILITY) W.S.R. ENDOMETRIAL FACTOR

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ABSTRACT

Infertility is defined as failure to conceive within one year or more than one year of regular & unprotected coitus. It is the most sensitive and cumbersome problem which haunts every couple. 10-15% world population affected by this problem. Among them Female is directly responsible about 30.20 %. The sub factors of female infertility are Ovarian, Endometrial, Tubal and Uterine etc. The endometrium (*Garbhashaya*) plays a major role in establishing a pregnancy and any alteration in this could be a potential cause for failure of implantation thus affecting fertility. *Jeevaniya Gana* is mentioned by *Acharya Sharangdhara* as *Garbhasandhankrid.* So this formulation was selected to see the effect on endometrial factor in form of Tablet. However, till date no published data is available on its analytical profile. The main aims and objectives of this study are to develop the pharmacognostical and phytochemical profile of *Jeevaniya Vati*. The pharmacognostical study reveals the presence of Lignified fibres, Prismatic crystals, Borderpitted vessels, Rhomboidal crystal, Scleroids, Stone cells etc. Pharmaceutical analysis showed that the loss on drying value was 8.245%, ash value was 8.9%w/w, water soluble extract was 46.3%, methanol soluble was 32.5%. HPTLC fingerprinting profile of Jeevaniya Vati revealed 7 spots at 254 nm and 5 spots at 366nm.

KEYWORDS: HPTLC, *Jeevaniya Vati*, Pharmacognosy, Physicochemical.

INTRODUCTION

Infertility is defined as failure to conceive within one or more years of regular & unprotected coitus. 10-15% world population affected by this problem. Female is directly responsible in 40% cases in infertility. In female aetiological factors like Ovulatory, Endometrial, Tubal factors, Fibroids etc. responsible to cause infertility.[1]

Acc. to Ayurveda, *Vandhyatva* (infertility) has been included in 80 types of diseases caused by the vitiation of *Vati.*[2] *Acharya Kashyapa* has mentioned *Pushpaghni* having useless *Pushpa* or menstruation (no conception) and certain others characterized with repeated expulsion of foetuses of different gestational periods.[3] Since in these conditions also the woman fails to get a child, thus it can be included under infertility. Acc. to *Acharya Charaka*, Infertile couples were considered shade less, branchless, fruitless waste tree or like a lamp in picture or portrait which will not emit any light or brightness.[4] Aim of Womanhood is complete after conception and child birth.

Jeevaniya Gana[5] is mentioned by *Acharya Sharangdhara* as *Garbhasandhankrid in Madhyakhanda, Churnakalpana Adhyaya.* It contains 10 drugs which are having Madhura, Snigdha, Sheeta properties. Prime ingredient of *Jeevaniya Vati* is *Shatavari* (*Aspargos racemosa* Willd.). *Kakoli* & *Ksheerakakoli* were replaced with *Ashwagandha*, *Meda* & *Mahameda* were replaced with *Shatavari and Jivaka & Rhishabhaka were replaced by Vidarikanda* due to it's unavailability.[6]

In spite of its numerous gynecological attributes, till date no published data is available on its analytical profile. Keeping these facts in concern, present study has been undertaken to develop the pharmacognostical and phytochemical profile of *Jeevaniya Vati*.

MATERIALS AND METHODS

Plant material

The raw drug materials were collected from the pharmacy department, GAU, Jamnagar. TABLE- 1.

Pharmacognostical Evaluation[7]

The raw drugs are identified and authentified and powder microscopy was done in the pharmacognosy department, IPGT & RA, GAU, Jamnagar. The study includes organoleptic evaluation and microscopic evaluation.

Microscopic Study

The individual powered drug are first examined under distilled water for the observation of calcium oxalate crystals and other cellular materials, then stained with Phloroglucinal and conc. HCl[8] for the lignified characters, then stained with iodine to observe the starch grains. Raw drugs were separately studied under microscope, the diagnostic characters microphotographs are taken by using Carl zeiss trinocular microscope.[9]

Method of preparation.

The drugs enlisted in the table number 1 were taken and *Jeevaniya Vati* was prepared as per classics.

- *Kalka Dravyas* - Each12gm (coarse powder)
- *Drava Dravyas – Godugdha* -3 litre, *Shatavari Swarasa*- 3 litre, *Goghrita* – 750 ml. TABLE- 2

Organoleptic Study

Contents of *Jeevaniya Vati* were evaluated for organoleptic characters like taste, odour and colour etc.[10]

Pharmaceutical evaluation

Physico-chemical analysis

Physico-chemical Parameters of *Jeevaniya Vati* like loss on drying, ash value, water soluble extract, methanol soluble extract were determined as per the API guideline.

HPTLC[11]

First of all take a drop of sample and diluted with haxen (as per require) then application of the sample at the one end of the precoated plate through linomat V (150 µl/sec) then on the sample zone again applied 7% alcoholic KOH then leave for 10-15 minutes at 60-80ºc in oven. The plate is then developed by the suitable mobile phase in a chromatographic chamber which was previously saturated with the mobile phase. Then after development it is visualized into day light, short uv (254nm) and/or by derivatization of the plate with suitable reagent. The R_f value and the colors of resolved bands and fingerprinting profiles are recorded.

RESULTS AND DISCUSSION

Organoleptic characters

Organoleptic characters of Contents of *Vati* ie. colour, taste and odour are recorded separately and are depleted. TABLE-2

Microscopic Study

Contents of *Jeevaniya Vati* showed Starch grains of *Ashwagandha*, Pitted vessels of *Ashwagandha,* Acicular crystals of Shatavari, Cork in surface view of Shatavari, Prismatic crystals of *Yashtimadhu*, Pitted vessels of *Yashtimadhu*, Simple trichome of *Mashaparni*, Simple trichome of *Mudgaparni,* Starch grains of *Vidari*, Lignified fibers of *Jivanti*, Stone cells of *Jivanti*, Prismatic crystal of *Vidari* etc. of the contents. **(Plate no. 1-14)**

Pharmaceutical evaluation

Organoleptic characters

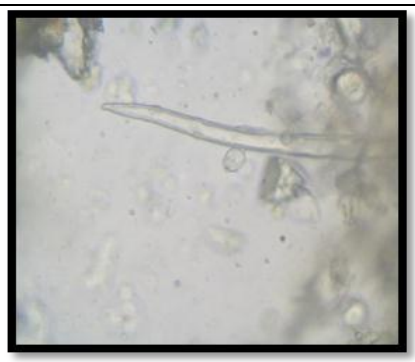
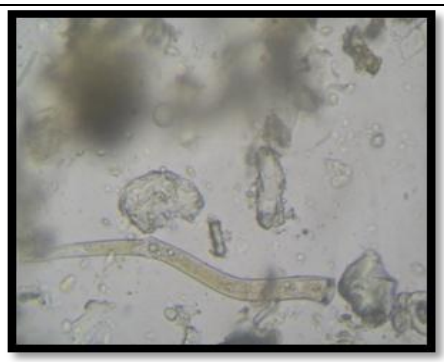
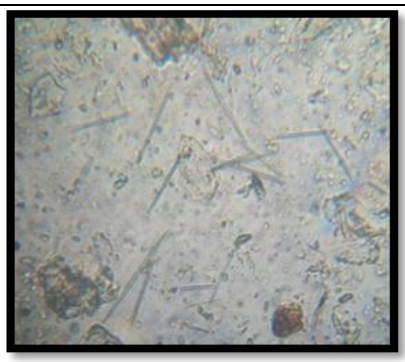
Organoleptic characters of Contents of *Vati* ie. colour, taste and odour are recorded separately and are depleted. TABLE-2.

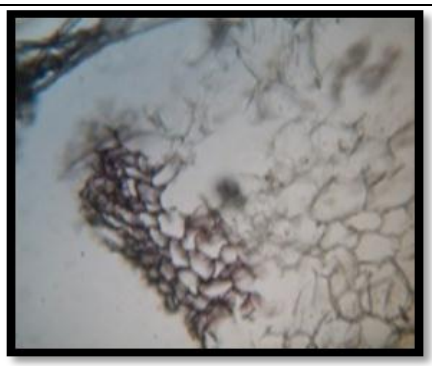
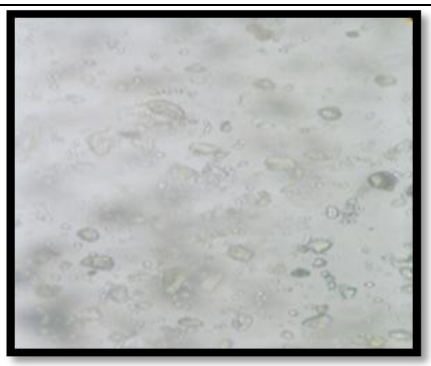
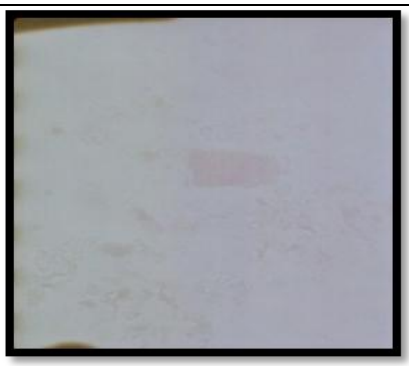
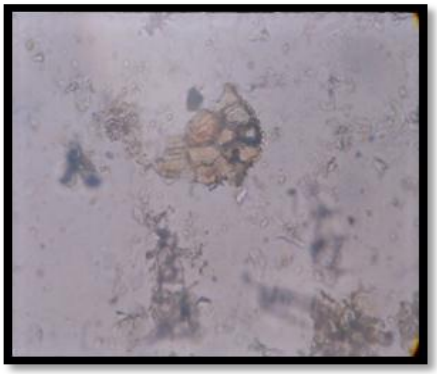
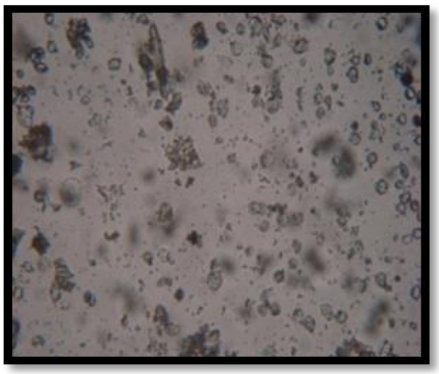
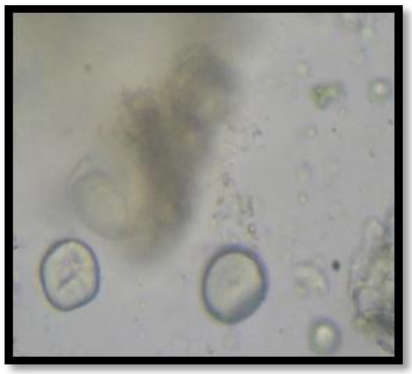
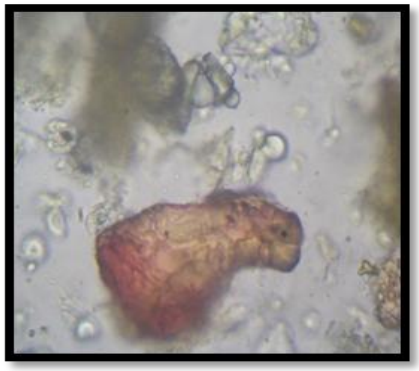
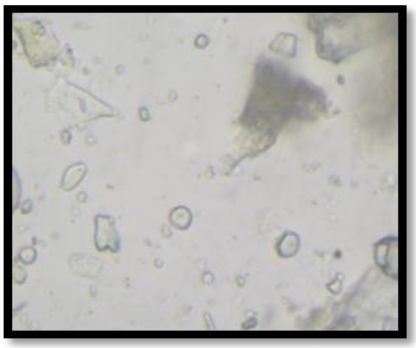
Physicochemical tests

Physicochemical analysis of Jeevaniya Vati revealed the the loss on drying value was 8.245%, ash value was 8.9%w/w, water soluble extract was 46.3%, methanol soluble was 32.5%, pH value was 7. TABLE- 3.

HPTLC study results: Chromatographic study (HPTLC) was carried out under 254 and 366 nm UV to establish fingerprinting profile. It showed 07 of spots at 254 nm with Rf values and 03 spots at 366nm with Rf values were recorded which may be responsible for expression of its pharmacological and clinical actions. TABLE- 4

PLATE 1: MICROPHOTOGRAPHS OF *JEEVANIYA VATI*

		
Simple trichome of Mashaparni	**Simple trichome of Mudgaparni**	**Acicular crystals of *Shatavari***

 Cork in surface view of *Shatavari*	 Prismatic crystals of *Yashtimadhu*	 Pitted vessels of *Yashtimadhu*
 Cork in surface view of *Ashwagandha*	 Simple starch grains of *Ashwagandha*	 Starch Grains of Vidari
 Lignified fibre of *Jivanti*	 Stone cells of *Jivanti*	 Starch grains of Yashtimadhu

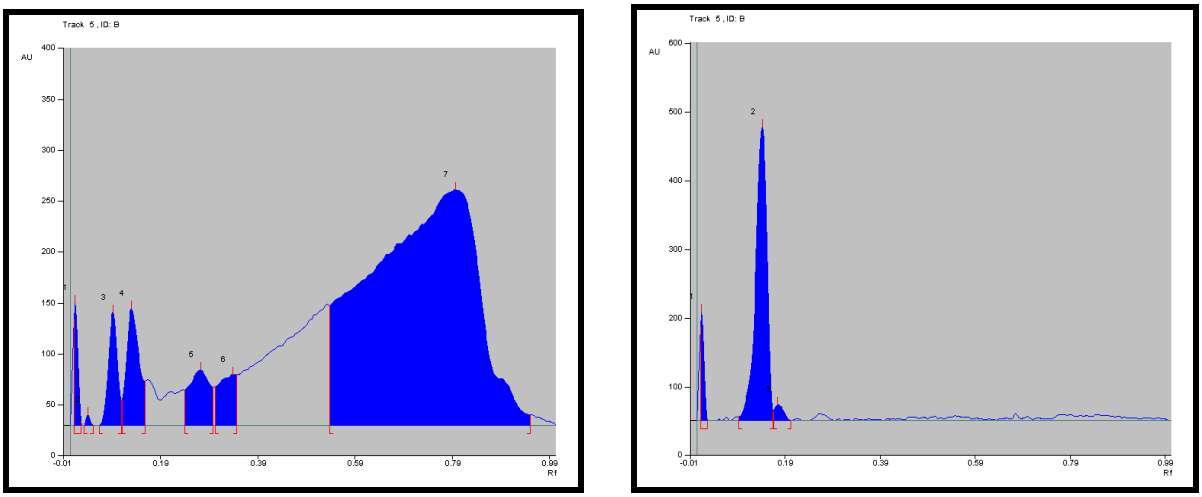


Plate 2: Densitogram of *Jeevaniya Vati* at 254 & 366 nm.

Table 1: Ingredients of *Jeevaniya Vati*

Name of drug	Latin Name	Part used	Ratio	Form
Yastimadhu	*Glycyrrhiza glabra* Linn.	Root	1	Churna
Vidari : Jivaka Rishabhaka	*Pueraria tuberosa* DC.	Tuber	1 1	Churna Churna
Shatavari: Meda Mahameda	*Asparagus racemosus* willd	Root	1 1	Churna Churna
Aswagandha : Kakoli Kshira Kakoli	*Withania Somnifera* (Linn.)	Root	1 1	Churna Churna
Jivanti	*Leptadenia reticular*	Root	1	Churna
Mudgaparni	*Phaseolus trilobus*	Whole Plant	1	Churna
Mashaparni	*Teramnus labialis* Spreng	Whole plant	1	Churna

Table-2: Organoleptic Characters

Sr. No.	Characters	Observed
1	Colour	Brownish Green
2	Odour	Light Fragrant
3	Taste	Sweet-Bitter

Table-3: Pharmaceutical Evaluation

Sr. No.	Parameters	*Jeevaniya Vati*
1.	Uniformity of Tab.	
	A- Average weight	804mg
	B- Highest weight	923mg
	C- Lowest weight	704mg
2.	Tab hardness	0.55kg/cm^2
3.	Loss of drying at 110^0 C	8.245 % w/w
4.	Ash value	8.9 % w/w
5.	Water Soluble Extract	46.3 % w/w
6.	Methanol Soluble Extract	32.5 % w/w
7.	pH (10% aqua solution)	7.0

Table- 4: Hptlc of Jeevaniya Vati

Wavelength	Number of spots	Max. Rf values
254nm	07	120.7, 10.4, 111.1, 115.2, 54.3, 50.0, 231.5
366nm	03	158.0, 426.2, 23.2

CONCLUSION

Pharmacognostical and phyto-chemical evaluation of *Jeevaniya Vati* illustrated the specific characters of ingredients which were used in the preparation. All the Pharmaceutical parameters analyzed within the permissible range. On the basis of observations and experimental results, the evaluation research of *Jeevaniya Vati* may be used as standard reference for further research work and clinical studies.

REFERENCES

1. Kanthi Bansal- Practical approach to infertility management published by Jaypee publication, chapter 1, 1st edition, 2004; 3-4.
2. Vriddha Jivaka, Kashyapa Samhita, Sutra sthana, 27/19,29, Pandit Hemaraja Sharma Commentator, 6th edition, Chaukhambha Samskrit Samsthan, Varansi, 1998; 41, 42.
3. Vriddha Jivaka, Kashyapa Samhita, Kalpa sthana, Revatikalpadhyaya 9/33, Pandit Hemaraja Sharma Commentator, 6th edition, Chaukhambha Samskrit Samsthan, Varansi, 1998; 192.
4. Acharya Charaka, Charaka Samhita with Vidyotini Hindi Commentary by Acharya Kasinath Shastri and Gorakhnath Chaturvedi, Chikitsa Sthana 2:1/17, 16th edition, Chaukhambha Bharati Acadamy, 1989; 68.
5. Sharandhar Samhita,Madhyam Khand -6/17-19 page no.
6. Bhavprakash of Sri Bhavmisra, Commentary by Shri Brahmasankara Mishra and Shri Rupalalaji Vaishya, Bhavaprakash Nighantu 1/144, 10th edition, Chaukhambha Publications, Varansi, 2002; 63.
7. Anonymous, the Ayurvedic Pharmacopoeia of India, Part-I, Vol. 1-4, Govt.bof India, Ministry of Health & Dept. of ISM and H. New Delhi; Dept. of Ayush; 1999; 155-56.
8. Khandelwal K.R. Practical Pharmacognosy-techniques and experiments. 19th ed. India: Nirali Prakashan; 2008; 26-27.
9. Trease, G.E., Evans, W.C. Pharmacognosy, 12th Ed. BailliereTindall, Eastbourne. U.K. 1983; 95-99, 512-547.
10. Trease and Evans, Pharmacognosy, 15th Ed., W.B. Sunders Company Ltd. 1996; 569, 570.
11. Kalasz, H. and Bathory, M., Present status and future perspectives of thinlayer chromatography, LC-GC Int, 10: 440-445.