WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 7.523
Volume 6, Issue 11, 740-747. Research Article ISSN 2277– 7105

PHARMACOGNOSTICAL AND PHARMACEUTICAL ANALYSIS OF *SHAWASAHARA DASHEMANI AVALEHA*

Kuldeep Kumar Soni[1*], Dr. Chuman Lal Bhaskar[2], K. S Patel[3], V. K. Kori[4], Harisha C. R.[5] and V. J. Shukla[6]

[1]PG Scholar, 2nd yr, Department of Kaumarbhritya. I.P.G.T. and R.A, GAU.

[2]PG Scholar, 1st yr, Department of Kaumarbhritya. I.P.G.T. and R.A, GAU.

[3]HOD Kaumarbhritya Dept. I.P.G.T. and R.A, GAU.

[4]Asso. Professor Kaumarbhritya Dept, I.P.G.T. and R.A, GAU.

[5]Head, Pharmacognosy, I.P.G.T. and R.A, GAU.

[6]Head, Pharmaceutical Chemistry Lab, I.P.G.T. and R.A, GAU.

Article Received on
27 July 2017,

Revised on 16 August 2017,
Accepted on 05 Sept. 2017

DOI: 10.20959/wjpr201711-9553

***Corresponding Author**
Dr. Kuldeep Kumar Soni
PG Scholar, 2nd yr,
Department of
Kaumarbhritya. I.P.G.T.
and R.A, GAU.

ABSTRACT

Tamaka Shwaasa is basically a disorder of *Praanavaha Srootasas* while other *Srootasas* are also vitiated. The parallel disease entity in contemporary medical science to this disorder is Bronchial Asthma. Bronchial Asthma is a chronic inflammatory condition of the lung airways resulting in episodic airflow obstruction. This disease is more predominant in children and aged population. In *Charaka Samhita*, the group of ten drugs is mentioned for the management of the *Shwasa Roga* named as *Shwasahara Dashemani*. Palatability is a main issue in treatment of children so keep it mind the avaleha form is prepared which is very easily palatable in children. Till date no published data is available regarding evaluation the effect of *Shwasahara Dashemani Avaleha*. **Methods:** Final product was subjected to Phrmacognostical and physico-chemical analysis such as microscopic study, loss on drying, ash value, pH etc. **Results:** Phrmacognostical study showed the presence of contents such as; annular vessels of Shati, simple trichome of Tulsi, rossels crystal of Jivanti etc. Preliminary physico-chemical analysis showed that the loss on drying value was found to be 25.66%, pH 6.5, Ash value-o.88%, Water soluble extract 76.01% etc. High Performance Thin Layer Chromatography (HPTLC) showed 6 and 3 spots at 254nm and 366nm respectively. **Conclusion:** The present work was carried out to standardize the finished product *Shwasahara dashemani Churna* in terms of its identity,

quality and purity. Pharmacognostical and Physico-chemical observations revealed the specific characters of all active constituents used in the preparation.

KEYWORDS: HPTLC, Pharmacogonosy, Shwasahara Dashemani Avaleha, pharmaceutical, Tamaka Shwasa.

INTRODUCTION

Respiration is the process from the first breath of new born till the last breath. Any disturbance in this process may lead to *Shwasa roga*. *Tamaka Shwasa* (Bronchial asthma) is one of the important disease of such disturbance of *Pranvaha Srotasa.* Description of condition focus on clinical Physiological and Pathological characteristics stressing central role of both chronic airway inflammation and increased airway hyper-responsiveness.[1] Ayurveda address it as "*Tamaka Shwasa.*" There are five kinds of *Shwasa*: *Kshudra, Tamaka, Chhinna, Maha* and *Urdhava. Tamaka Shwasa* is a type of *Shwasa Roga* affecting the *Pranavaha Srotas.* The parallel disease entity in western medicine to this disorder is Bronchial Asthma. Bronchial Asthma is a chronic inflammatory condition of the lung airways resulting in episodic airflow obstruction. Asthma is the most common chronic lower respiratory disease in childhood throughout the world. The prevalence of Bronchial Asthma an estimated 4 to 7% of the people worldwide.[1] It is mentioned as ***Yapya Vyadhi***[4] i.e. a disease of chronic nature in ***Charaka Samhita***, while ***Sushruta*** considered it as ***Krichchra Sadhya Vyadhi***[5]

It is one of the most important chronic conditions causing elementary school absenteeism in childhood.[2,3] In *Charaka Samhita*, the group of ten drugs is mentioned for the management of the *Shwasa Roga* named as *Shwasahara Dashemani*.[4] (Table 1) In the present day practice, among these ten drugs most of the drugs are being used in different combinations. But, no any research work or documentation is available about the use and efficacy of *Shwasahara Dashemani Avaleha* as a whole in the management of the *Tamaka Shwasa* in children. It prevent the attack of asthma due to anti tussive, anti-inflammatory, mucolytic property etc. which is very useful to decrease the asthma prevelance. In the present study, the formulation is subjected to Pharmacognostical and pharmaceutical analysis. Preliminary organoleptic features and results of microscopy were verified and all the ingredients were proved to be authentic.

MATERIALS AND METHODS

Collection, Identification and Authentication of raw drugs

The raw materials were collected from the pharmacy of Gujarat Ayurved University, Jamnagar. All the raw drugs were identified and authenticated in the Pharmacogonosy Department, Institute for Post Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar.

Preparation of the drug

As specific method of preparation is not mentioned for this drug, it was prepared in Pharmacy of Gujarat Ayurved University, Jamnagar as per common guidelines described in classics and API for *Avaleha* formulation. Physico-chemical and qualitative analysis of the final product were carried out in the pharmaceutical chemistry laboratory of IPGT & RA, Gujarat Ayurved University, Jamnagar under expert guidance.

Pharmacognostical study

The Pharmacognostical study comprises of organoleptic study and microscopic study of finished product.

Microscopic Study

Shwasahara Dashemani Avaleha was dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Shwasahara Dashemani Avaleha* was also taken under Corl-zeiss trinocular microscope.[5]

Organoleptic Study

The Organoleptic characters of *Ayurvedic* drugs are very important and give the general idea regarding the genuinity of the sample. Organoleptic parameters like Taste, Colour, odour and touch were scientifically studied in Pharmacognosy laboratory, I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, Gujarat, India.[6]

Physico-chemical analysis

Shwasahara Dashemani Avaleha was analyzed using various standard physico-chemical parameters such as loss on drying, water soluble extract, alcohol soluble extract etc.[7]

High Performance Thin Layer Chromatography (HPTLC)

HPTLC was performed as per the guideline provided by API. Methanolic extract of drug sample was used for the spotting. HPTLC was performed using Toluene+ Ethylacetate+

Acetic acid (7:2:1) solvent system and observed under visible light. The colour and Rf values of resolved spots were noted.[7]

RESULTS AND DISCUSSION

Organoleptic characters of *Shwasahara Dashemani Avaleha*

Organoleptic characters contents of *Shwasahara Dashemani Avaleha* like colour, taste, touch, Odour were recorded and shown in **Table- 2**.

Microscopic Study

Diagnostic characters of *Shwasahara Dashemani Avaleha* under the microscope showed stone cells, septate fibres, Rhamboidal crystal etc. All these are showed in

Plate no 1.

PHARMACEUTICAL EVALUATION

Physico-chemical analysis

Physico-chemical analysis of *Shawasahara dashemani Avaleha* revealed the value of loss on drying was 25.66%, Ash value 0.88% w/w, water soluble extraction 76.01% Alcohol soluble extraction 58.89%, pH Value 6.5, Reducing sugar 59.2mg, Non-Reducing Sugar 172.8mg, Total sugar 232.0mg are shown in **Table –3.**

HPTLC Study

The chromatographic study (HPTLC) was carried out under 254 and 366 nm UV to establish fingerprinting profile. It showed 6 spots at 254 nm and 3spots at 366 nm with Rf values were recorded which may be responsible for expression of its pharmacological and clinical actions. **Plate 2, Table – 4.**

CONCLUSION

The pharmacognostical and physico chemical analysis of *Shwasahara Dashemani Avaleha* confirmed the purity and genuinety of the drug. Further studies may be carried out on it on the basis of observation made and results of experimental studies. As there is no published pharmacognostical and physico-chemical profiles of *Shwasahara Dashemani Avaleha* are available this study may be beneficial for future researchers and can be used as a reference standard in the further quality control researchers.

Table 1: Contents of *Shwasahara Dashemani Avaleha.*

Sr. No.	Drug name	Scientific name	Part used/*Shushka*	Ratio
1	*Shati*	*Hedychium spicatum*.Ham exsmith	Shushka kand	1 part
2	*Pushkara mool*	*Inula racemosa.* Hook. F	Moola	1 part
3	*Amlavetasa*	*Rheum emodi.* Wall	Patra, Bija	1 part
4	*Ela*	*Elettaria cardamomum* Maton	Phala	1 part
5	*Hingu*	*Ferula narthex* Boiss	Niryasa	1 part
6	*Agaru*	*Acquilaria agallocha* Roxb.	Kashtha	1 part
7	*Sursa*	*Ocimum sanctum* Linn.	Panchanga	1 part
8	*Tamalaki*	*Phylenthus niruri* Linn.	Panchanga	1 part
9	*Jivanti*	*Laptidinia reticulate* W & R	Panchanga	1 part
10	*Chanda*	*Angelica glauca* Edgw.	Moola	1 part
11	*Sugar*			s. q.
12	*Honey*			s. q.

Table 2: Organoleptic parameters of *Shwasahara Dashemani Avaleha.*

Serial no.	Character	Observed
1	Colour	GoldenBrown
2	Odour	Slightly acromatic
3	Taste	Sweet
4	Touch	Semi Solid

Table 3: Physico-chemical analysis of *Shwasahara Dashemani Avaleha.*

Serial no.	Test	Result
1	Loss on drying	25.66%w/w
2	Ash value	0.88%w/w
3	Water soluble extract	76.01%w/w
4	Alcohol soluble extract	58.89%w/w
5	pH	6.5
6	Total sugar	232.0mg
7	Reducing Sugar	59.2mg
8	Non Reducing Sugar	172.8mg

Table 4: HPTLC Study of *Shwasahara Dashemani Avaleha.*

Wave Length	Number of spots	Rf values
254nm	6	0.02, 0.44, 0.69, 0.79, 0.93, 0.98,
366nm	3	0.02, 0.73, 0.93

Plate no 1: Microphotographs of *Shwasahara Dashemani Avaleha.*

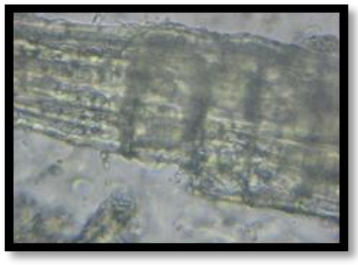
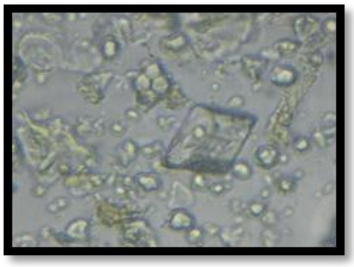
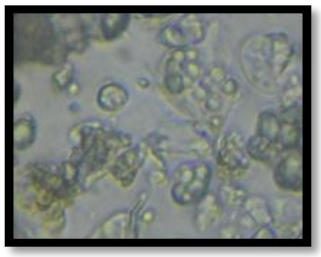
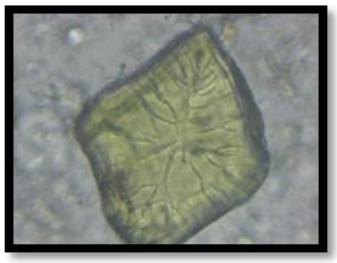
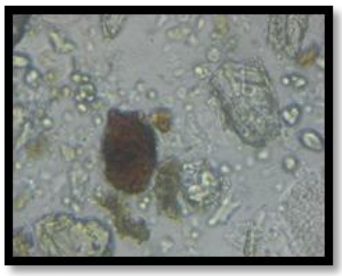
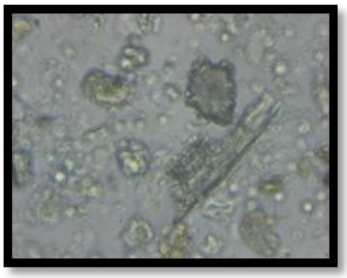
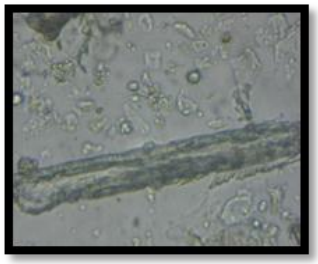
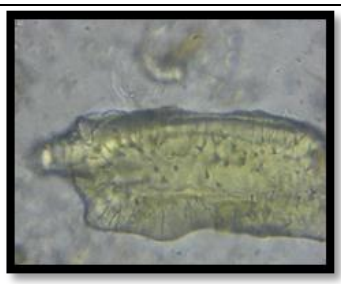
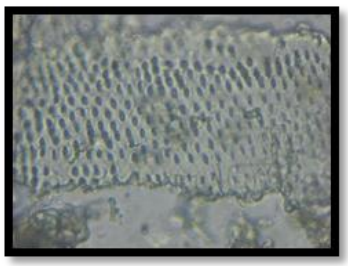
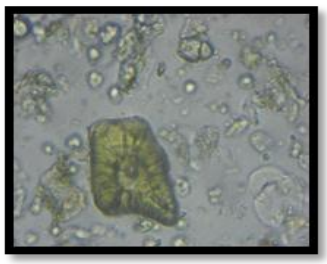
			
Shwasahara dashemani avaleha	**Septet fibers of Amlavetas**	**Rhomboidal crystal of Ela**	**Simple compound starch grain Shati/ Agaru**
			
Second stone cells Agaru	**Tanin content Pushkarmool**	**Cluster crystal Jivanti**	**Fibres shati**
			
Schleraides of agaru	**Border pitted vessels of Tulsi**	**Stellate trichome of bhumi amalaki**	**Stone cells of ela**

Plate 2: Densitogram of *Shwasahara Dashemani Avaleha at* 254 nm and 366 nm.

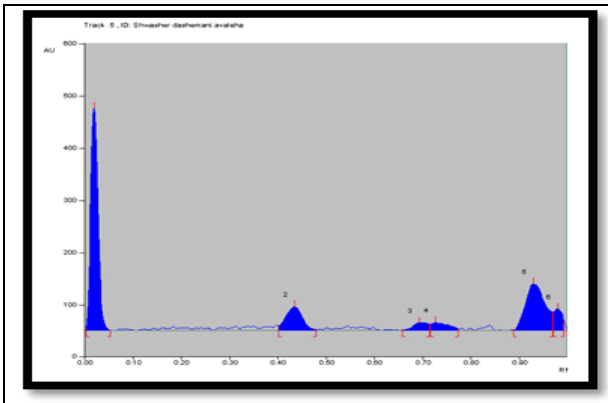
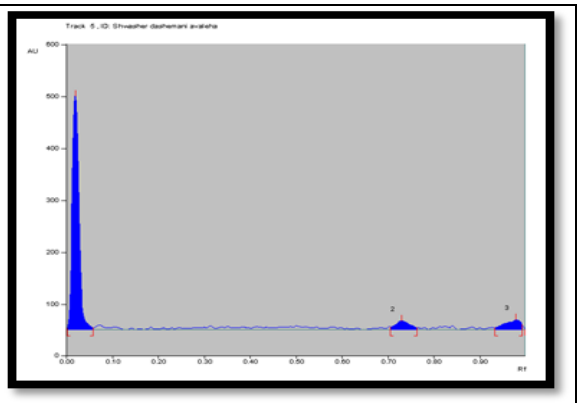
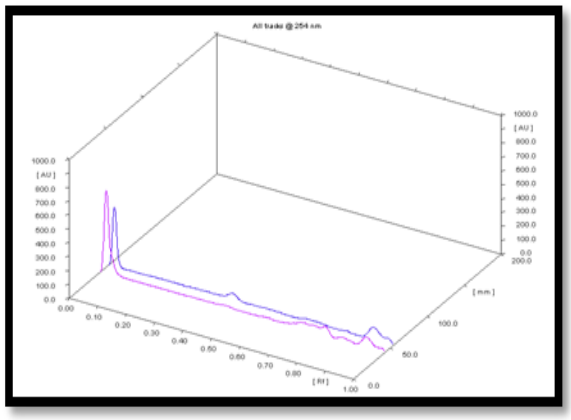
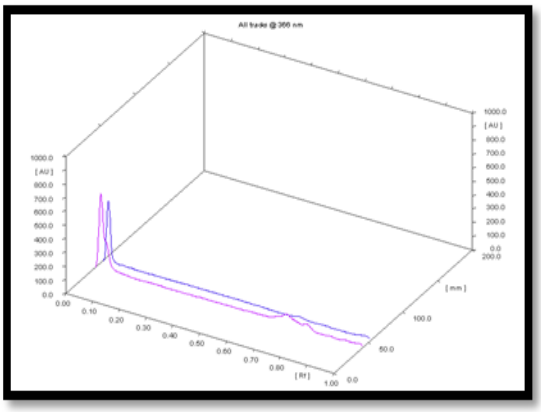
	
Peak display at 254nm	**Peak display at 366 nm**

Plate 3: Three dimensional HPTLC (3D) Densitgram.

	
254nm	**366nm**

Abbreviations

C. S. : Charaka Samhita.

W. H. O. : World Health Organization.

HPTLC : High performance thin layer Chromatography.

ACKNOWLEDGEMENTS

At this propitious juncture of completion of my research article I am eager to remember the contributions of special personalities towards this work. I am extremely happy to express my deepest sense of gratitude to my guide Dr. V. K. kori for his guidance and support throughout the work. I would like to express my sincere gratitude to co-guides of this study Prof. K.S. Patel, Harisha C. R., V. J. Shukla for the active encouragement and positive suggestions without which this would never have been possible.

REFERENCES

1. International study of Bronchial Asthma and allergies in childhood (ISAAC). *Worldwide variations in the prevalence of Bronchial Asthma symptoms*, Eur Respir J., 1998; 12: 315-35
2. Shah JR, AMDEKA YK, Mathur RS. *Nationwide variation in prevalence of bronchial asthama* – (part of the international study of Bronchial Asthma and allergies in childhood (ISAAC). Indian J Med Sci., 2000; 54: 213
3. Gürkan F, Ece A, Haspolat K, Derman O, Bosnak M, *Predictors for multiple hospital admissions in children with Bronchial Asthma,* Can Respir J., 2000; 7: 163–6.
4. Charaka Samhita Sootrasthana 4/37 Page No. 34 Editor Yadavji Trikamji Acharya, Publisher Chaukhambha orientalia Varanasi Reprint, 2011.

5. Wallis TE, Text book of Pharmacognosy, 5th Ed., New Delhi: CBSPublishers & Distributors, 2002; 123-132: 210-215.
6. Trease and Evans, Pharmacognosy, 15th Ed., W.B. Sunders Company Ltd., 1996; 569: 570.
7. Ayurvedic Pharmacopoeia of India PDF-1, Govt. of India, Ministry of health and family welfare, Delhi, 2007; 5, appendix-2.2.9: 214.
8. Stahl E; Thin-layer chromatography a laboratory hand book. 2nd edition. Springer-Verlag New York, 1969; 125-133.