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PHARMACOGNOSTICAL AND PHYTOCHEMICAL ASSESSMENT OF POLYHERBAL FORMULATION OF UDUMBARADI TAILA

SINGH A[1], KUMAR A[2], SINGH AK[3]

1. Senior Resident and Ph. D Scholar; Department of Dravyaguna; Faculty of Ayurveda, IMS, BHU
2. Ph. D Scholar, Department of Dravyaguna; Faculty of Ayurveda, IMS, BHU
3. Professor, Department of Dravyaguna; Faculty of Ayurveda, IMS, BHU

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Abstract: Udumbaradi Taila is an ayurvedic preparation based on Taila/Sneha kalpana which is basically indicated in vulvovaginitis. This formulation is a polyherbal preparation contains thirteen drugs prepared in base of Til taila. Sneha kalpana is a process where the active principles present in the drug are extracted with the sneha (ghee or oil) during pharmaceutical process. The raw drugs which are used in this formulation require some pharmacognostical and phytochemical study for evaluation of the drug in formulation form. For the extract soxhalet method was adopted and in this thirteen drugs were passed through three different chemicals i.e Petroleum ether, Ethyl Acetate and Ethanol.

Keywords: Extract, pharmacognostical study, phytochemical screening

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Corresponding Author: DR. ANJALI SINGH

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INTRODUCTION

During ancient period human being has been a thinking creature. His ability of rational thinking and knowledge guided him for discovery and invention of innumerable remedies for several diseases from the flora and fauna. Sneha kalpana is a secondary preparation derived from both kashaya and kalka kalpana. It is the process where the active principles present in the drug extracted with the sneha(Ghee or oil) during the pharmaceutical process. Acharya Caraka had mentioned this Udumbaradi Taila in Yoniroga (Disease related with female genital tract) for the treatment of Vulvovaginitis[1].

Ingredients of Udumbaradi Taila are :- Udumbar (Ficus glomerata Roxb.) Fruit and bark, Vata (Ficus bengalensis Linn.) bark, Ashwattha (Ficus religiosa Linn.) bark, Parish (Ficus rumphii Blume.) bark, Kulaka (Trichosanthes cucumarina Roxb.) leaf, Jati (Jasminum officinale Linn.) leaf, Nimba (Azadirechta indica A. Juss) leaf, Laksha (Lacifera lacca) exudate, Dhava(Anogiessus latifolia Wall.) bark, Palasha(Butea monosperma Linn. Kuntze) bark, Shalmali (Salmalia malabarica Schott & Endl.) exudate, Til (Sesamum indicum Linn.) seed[2].

AIMS AND OBJECTIVE –

1. Preparation of extract with Soxhlet method[3].
2. Thin layer chromatography[4]
3. Assessment of Phytochemicals present in the polyherbal preperation[5].

MATERIAL AND METHOD –

Raw drugs of this formulation for present phytochemical assessment were collected from the Barkaccha, Mirzapur. Drug was certified by Professor Dr. A. K Singh of Department of Dravyaguna. Good quality drugs were collected and cleaned well. All thirteen drugs of Udumbaradi tail were dried in hot air oven and converted into crude form. After this weighed 130 gm of crude drug 10 gm each and placed in soxhalet and add 830 ml of petroleum ether at 30º C and successively followed by ethyl acetate 800ml and ethanol 800ml at same temperature.

All three extract found after extraction process via three above mentioned chemicals were subjected to the below mentioned analysis and results are mentioned below except ash value because ash value done at the drying stage of drugs i.e before extraction.

1. Ash Value 2. Extractive value 3. Loss on drying
4. TLC Profile 5. Phytochemical Screening

RESULT-

Ash value[6] - Ash value is a measure of the total amount of minerals present within a drug.

Total ash value of crude drug = 17.0% , Acid Insoluble ash = 9% , Water soluble Ash = 14%

Extractive value[7] **-** Extract from petroleum ether was oily in nature and weight of extractwas 0 .448 gm with 9% yield. Extract from ethyl acetate was viscous in nature with 16.8 gm weight and 34% yield. Extract from ethanol was viscous in nature with 2.8 gm weight and 58% yield.

Petroleum ether extract

Ethyl acetate extract

Ethanol extract

Loss on Drying[8]**-** Method for determination of moisture content present in the drug.

(Method applied to determine it is Gravimetric Method) , Loss on Drying is 5%.

TLC Profile

Thin layer chromatography is one of the most widely used techniques for rapid identification of drugs and its formulations. It is equally applicable to drugs in their pure state, to those extracted from pharmaceutical formulations and to biological samples. Time required demonstrating the presence of constituents of drug formulations by TLC is very short[5].TLC require some phases which are as follows-

Stationary phase (Application) – Prepared extract were applied on Silica gel G with uniform layer and thickness approx. 0.2mm.

Mobile phase (Development) – The sample was developed with the help of mobile phase and three different extract were run in different solvent system and these are as follows with different Rf Values in Table 1,2 &3.

Table 1. For the extract of petroleum ether two different solvent system were used.

Solvent System	Sopts	Colour	Rf Value
Ethyl Acetate: Menthol: Water (100:13:10) Plate I	1	Brown	0.21
	2	Blue	0.3
	3	Light Blue	0.46
	4	Buff	0.61
	5	Blue	0.61
	6	Brown	0.78
	7	Brown	0.88
	9	Blue	0.92
	9	Light Blue	0.99
n Butanol: Glacial Acetic Acid: Water (50:10:40) Plate II	1	Brown	0.21
	2	Brown	0.29
	3	Blue	0.36
	4	Brown	0.45
	5	Buff	0.59
	6	-	-

Table 2. For the extract of Ethyl acetate again use of two different solvent system

Solvent System	Sopts	Colour	Rf Value
n Butanol: Glacial Acetic Acid: Water (50:10:40) Plate III	1	Light Brown	0.29
	2	Light Brown	0.40
	3	Red	0.42
	4	Brown	0.48
	5	-	-
	6	-	-
Chloroform: Menthol (95:5) Plate IV	1	Bluish Green	0.11
	2	Light Blue	0.17
	3	Blue	0.29
	4	Light Blue	0.25
	5	Light Blue	0.31
	6	Light Blue	0.44
	7	Light Blue	0.51
	8	Light Blue	0.66
	9	Light Blue	0.72

Table 3. For the extract of Ethanol use of single solvent system

Solvent System	Sopts	Colour	Rf Value
Ethyl Acetate: Menthol: Water (100:13:10) Plate V	1	Brown	0.24
	2	Brown	0.89
	3	Brown	0.88
	4	Brown	0.92

Visualisation (Scanning) – For visualisation plate was dried at 100ºC and scanned under visible light and plate V was stained with iodine and seen under visible light.

- **Phytochemical Screening-**

Chemical Test	Pet. Ether Extract	Ethyl Acet. Extract	Ethanol Extract
Test for Carbohydrate	-Ve	-Ve	-Ve
Test For Protein	-Ve	-Ve	+Ve
Test For Fats & Oils	+Ve	-Ve	-Ve
Test For Glycosides	-Ve	+Ve	+Ve
Test For Alkaloids	+Ve	+Ve	+Ve
Test For Tannins & Phenolic Compounds	+Ve	+Ve	+Ve
Test For Flavanoids	+Ve	-Ve	+Ve
Test For Saponins	+Ve	+Ve	+Ve

DISCUSSION AND CONCLUSION

Drugs of Udumbaradi Taila was subjected to different method like:- Ash Value, Extractive value, Loss on drying, TLC Profile , Phytochemical Screening. In phytochemical screening we found presence of amino acid, fatty acid and oil, glycosides, alkaloids, tannins, phenols, flavanoids and saponin. It is an ayurvedic polyherbal formulation which could be a good drug for further evaluation. With the help of different Rf values which is found after TLC process we can assess the actual content.

Plate I

Plate II

Plate III

Plate IV

Plate V

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