

Pharmacognostical and Pharmaceutical Analysis Ofishvaakufor Vamana in Sthula Pramehi W.S.R Totype-2 Daibetes.

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ABSTRACT: Kapha Dosha is the key factor for Prameha. Sthoulya is the Nidanarthakara Roga for Prameha,

In modern system of medicine Sthula Prameha can be compared with Type 2 Diabetes. Vamana is indicated as line of treatment in Sthula pramehi. In present study Ishvaaku beej has taken for the Vamana Ausadha. Ishvaaku beej powder is mentioned in Charaka Samhita Sidhhi Sthana as best Vamana ausadha for prameha. Pharmacognostical & Analytical study of Ishvaaku beej has been carried out for the evaluation of its efficacy in the Vamana Karma in management of type 2 DM. Ishvaaku (*Lagenaria vulgaris*) is an annular herbaceous climber plant with medicinal uses for treatment of various ailments including Jaundice, Diabetes, Ulcer, Piles, Colitis, Asthma, Insanity, Hypertension, CCF, Skin disorders. Its seeds powder is used as emetic. Based on classical Ayurvedic textual indications and recent pharmacological studies its seeds powder was selected for studying its emetic effect clinically on Type 2 diabetes. The present paper highlights the pharmacognostical and phytochemical details. Pharmacognostical study shows fibers, annular vessels and calcium oxalate crystals. physicochemical parameters shows total ash, acid insoluble ash 10.63 % w/w, alcohol soluble extractive value 46 % w/w. High performance Thin Layer Chromatography (HPTLC) study shows 6 spots in 254 nm and 5 spots on 366 nm.

KEY WORDS: Ishvaaku, *Lagenaria vulgaris* Vamana, Type 2 diabetes, Pharmacognosy.

I. INTRODUCTION:

Ayurvedic medicines are promising choice over modern synthetic drugs they show minimum or less side effects and considered to be safe. One of the earliest treatises of Indian medicine; the

Charaka Samhita (1000 B.C.) mentions the use of over 2000 herbs for medicinal purposes. Revival of interest in Ayurveda there has been a phenomenal increase in the demand for specialized therapies of Ayurveda out of which Panchakarma presents a unique approach of Ayurveda with specially designed five procedures of internal purification of body through the nearest possible roots. Such purification allows the biological system to return to homeostasis & to rejuvenate rapidly and also facilitates the desired pharmacotherapeutic effects of medicine administered thereafter. Panchakarma has a full role of promotive, preventive and curative procedures. Out of the five procedures of Panchakarma Vamana or therapeutic emesis is the procedure of eliminating Kapha Dosha from the body through the upper passage by the vomiting. Out of these drugs, Ishvaaku is mentioned in Diabetes. So it is a need of time to prove the pharmacological actions of these drugs on particular disease with the help of modern tools of standardization. Hence, to provide standard parameter for the quality control of Ishvaaku seed powder in type 2 diabetes, the present study was carried out. Pharmacognostical, pharmaceutical and phytochemical analysis of *Lagenaria vulgaris*. The basic principle of Ayurveda is to augment the deficiency, to suppress the aggravation, reduce the increment of Doshas and also maintain the equilibrium of Doshas in healthy state. Ayurveda advocates two kinds of treatment measures, which represent the end-phase of all the treatment processes, namely Shodhana (Purificatory or eliminatory) and Shamana (Pacifactor) of which the former is given the first place. Doshas once cured by pacification may circumstantially be provoked again, where as it can't ever do so, once it is totally expelled from the system by purification.

In Ayurveda, the father of medicine, Acharya Charaka has classified the Prameha into two types i.e. SthulaPramehi and KrishaPramehi. Santarpanjanya and AptarpanjanyaPramehi. It can also be correlated with the classification given by Acharya Vagbhata i.e. DhatukshayajanyaPrameha and AvaranajanyaPrameha respectively.

The factors which provoke the Vata directly cause ApatarpanjanyaPrameha while the factors which provoke Kapha and Pitta cause SantarpanjanyaPrameha.

In AvaranajanyaPrameha, Kapha is the predominant Dosha while the important Dushyas are Meda and Kleda. Shodhana is the best treatment for elimination of Doshas. Vagbhata has mentioned that Doshas should be eliminated through the nearest passage. So, for the upper part lying Doshas and low lying Doshas, Vamana and Virechana is the appropriate Shodhana procedure, which is specific for the elimination of vitiated Kapha Doshas.

Type 2 diabetes (formerly called non-insulin-dependent or adult onset diabetes) results from the body's ineffective use of insulin. Overweight and obesity are the strongest risk factors for Type 2 diabetes. Higher waist circumference and higher body mass index (BMI) are associated with increased risk of Type 2 diabetes.

The trial drug named ishvaaku is a very simple formulation, explained in Charaka Samhita for the vamana procedure in diabetic patients. Here ishvaaku seeds powder is used in paste form with water. Rasa: Tikta, Guna: Laghu, Ruksha, Virya: Tikshna, Sheeta, Vipaka: Katu and Kaphashodhan properties.

Botanical Description of Plant[7]:

Lagenaria vulgaris Belonging to family cucurbitaceae, commonly known as Bitter bottle guard (Eng), Lauki (Hindi). It is a large pubescent, climbing or trailing herb with stout 5-angled hispid stems and bifid long tendrils. It found throughout the India either wild or cultivated. Leaves are long, petioled having 3-5 lobed, 7-10 or 10-12 cm. long. Fruits are 1-8 m large, bottle shaped with hard shell like epicarp when ripe. Seeds are numerous, long, white, smooth, 1.6-2 cm. long and horizontally compressed with marginal groove. Flowers are large white, solitary, monoecious. Seeds are many, obovate-oblong, white & compressed.

II. MATERIALS AND METHODS:

Collection of raw drugs:

Ishvaaku fruits were collected from the local market of district Indore of Madhya Pradesh. The final product i.e. ishvaaku seed powder was prepared in the RSBK Laboratory, Rasashastra Dept., ITRA Jamnagar.

Table no. 1. The ingredient & parts used in the preparation of ishvaaku seed powder

No.	Name	Latin Name	Part Used
1.	Ishvaaku	Lagenaria vulgaris	Seeds

METHOD OF PREPARATION:

Seeds from the ripened fruits of Ishvaaku (*Lagenaria vulgaris*) were taken out, dried, and were grinded to get the coarse powder. Then stored in a tightly closed container to protect from light and moisture.

1) Pharmacognostical study:

The Pharmacognostical study comprises of Organoleptic study and Microscopic study of finished product.

➤ **Organoleptic study:**

The Organoleptic characters of Ayurvedic drugs are very important and give the general idea regarding the genuinity of the sample. It is done with the help of Panchagyanendriya Pariksha.

Table no. 2: The Organoleptic study of the Ishvaaku beeja powder.

1	Color	Brownish
2	Odor	Pungent
3	Taste	Bitter Pungent
4	Touch	Rough

Powder of the drug was studied microscopically and microscopic characters of the drugs were drawn.

Fig. 1 Microphotographs of Ishvaaku Beeja



2) Analytical Study

Table No-3: The physico-chemical parameters of Ishvaaku Beeja are.

No.	Parameters/ Sample	Ishvaaku Beeja
1.	Loss on drying	11.19% w/w
3.	Ash % value	4.84
4.	Water soluble extract	87.801
5.	Alcohol soluble extract	62.2
6.	PH	1.4830

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

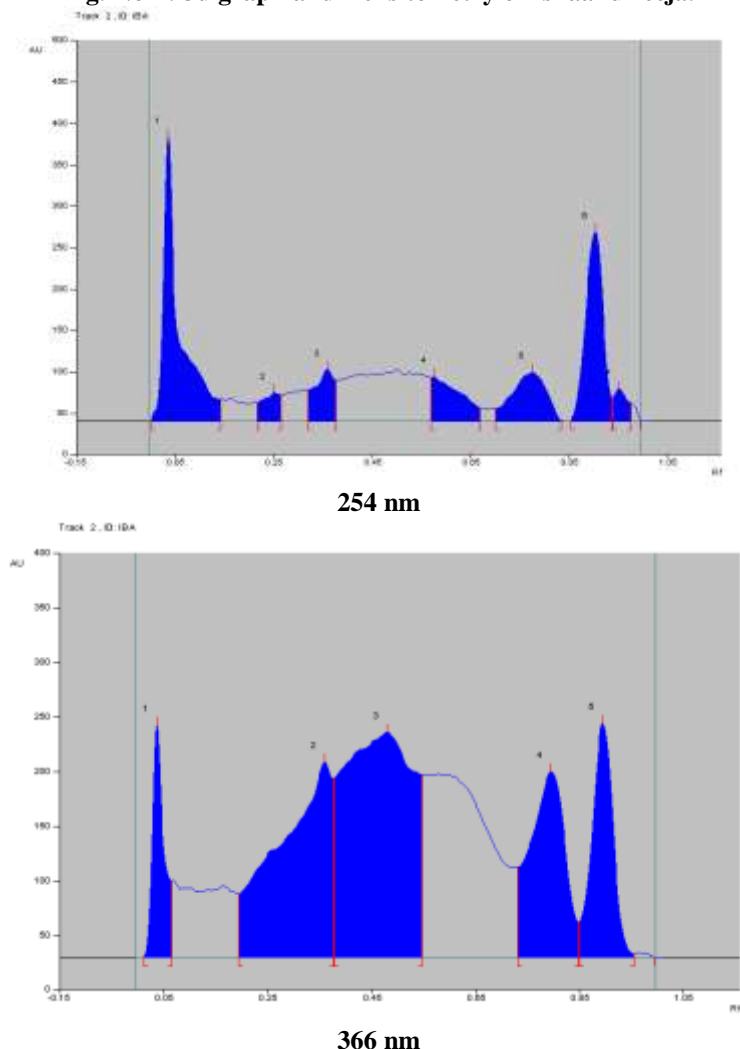
performed using Toluene+Ethylacetate+ Formic acid (7:2:0.5) solvent system and observed under visible light. The colour and Rf values of resolved spots were noted.

HPTLC STUDY:

Table No- 4: HPTLC profile/ Rf values of Ishvaaku beeja.

Wavelength	No. of Spots	Rf values
Short UV (254 nm)	6	0.05, 0.25, 0.45, 0.65, 0.85, 1.05.
Long UV 366nm	5	0.05, 0.25, 0.45, 0.65, 0.85

Fig. No-2: 3d graph and Densitometry of IshaakuBeeja.



III. DISCUSSION :

Standardization is a measurement for ensuring the quality control enabling the reproducibility of the formulation. Raw drugs were authenticated and analysed before processing because good quality products mainly dependent upon genuine raw materials. Pharmacognosy study helps in authentication of the commonly used drugs through morphological, histological and physico-chemical parameters. This can prevent the accidental misuse of drugs and adulteration to a greater extent. Evaluation of physico-chemical parameters and qualitative analysis helps to identify the presence of specific ingredients in a sample and application of chromatographic techniques aid in recognition of number of ingredients and also to assess the purity by comparing with the standard

ones. pH is the measure of acidity or basicity of a solution. In the present sample pH was detected by using pH indicator paper and it was 1.4 showing the acidic nature of the solution. Loss on drying method is applied to determine the amount of water, all or a part of water for crystallization, or volatile matter in the sample. Loss on drying of test drug is 11.19 % w/w. Total ashes are designed to measure the total amount of material remaining after ignition. It includes both physiological (which is derived from the plant tissue itself) and non-physiological ash (residue of the extraneous matter likes and etc adhering to the plant substance) Ash value of *Lagenaria vulgaris* seed powder is 4.84 %w/w. Water soluble extract & alcohol soluble extract is 87.80% w/w & 62.2% w/w respectively. Thin layer chromatography is the most common

form of chromatographic method used by Ayurvedic research workers to detect the number of compounds present in a product. It also helps to determine the purity of the sample. Identity of a compound is also possible by comparing it with the Rf value of a known compound. Here for the purpose of conducting TLC tracks were made having the sample ethyl acetate extract of *Lagenaria vulgaris* seed powder. The sample tracks and mobile phase remained the same for all the experiments related to TLC. The spots produced by TLC were observed in day light, short UV and long UV and Rf value was calculated. After completion of chromatographic procedure spraying of the plate was done with Anisaldehyde and the spots obtained were observed in day light. HPTLC profile of the methanolic extract of the drug showed 6 spots at 254 nm and 5 spots at 366 nm.

IV. CONCLUSION :

Quality control of Herbo- mineral formulation is very much necessary to assess its safety, purity and universal acceptability. Identified phytochemical components content in the present sample i.e., tannins have highly antioxidant & anti-inflammatory function, saponin shows steroidal aglycone structure with antibacterial & adjuvant property, phytosterol promise in allergies and stress related illness, flavonoids are antioxidant, anti-inflammatory, anti-allergic relieves hay fever, eczema, sinusitis All this support the intended action of the given sample in management of Type 2 diabetes. Ishvaaku is mentioned in Ayurvedic text for the management of Type 2 diabetes. Study based on various parameters results at conclusion that the ishvaaku have stable shelf life at room temperature. HPTLC results suggest the presence and incorporation of active constituents of herbal drugs into lipid formulations. For the prospective research, study will be helpful to the establishment of safety profile, efficacy and acceptance of classical Vamana formulation.

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