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Original Research Article

ISOLATION PHARMACOGNOSTICAL ANALYSIS OF SHATAPUSHPADI UPANAHA CHURNA USED IN JANUSANDHIGATAVATA (KNEE JOINT OSTEOARTHRITIS)

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ABSTRACT

Introduction: *Sandhigatavata* specially occurs in *Vriddhavastha* due to *Dhatukshya*, in which *Vataprakopa* is inevitable naturally. In modern medical science it is correlated with Osteoarthritis. In Ayurveda classics there are lot of drugs for the *Sandhigatavata*, *Upanaha* is one among them. Here *Shatapushpadi Upanaha Churna* was prepared and pharmacognostical study was done. **Methods**- *Shatapushpadi Upanaha Churna* was subjected to Phrmacognostical analysis such as microscopic study. **Results and Discussion**- Phrmacognostical study showed the presence of contents such as; Spiral vessel of *Shatapushpa*, Lignified crystal fibre of *Devadaru*, Lignified fibre passing through medullary rays of *Erandmoola*, Starch grains of *Shunthi* etc respectively. **Conclusion**- The present work was carried out to standardize the *Shatapushpadi Upanaha Churna* in terms of its identity, quality and purity. Pharmacognostical observations revealed the specific characters of all active constituents used in the preparation.

Keywords- *Sandhigatavata,* Osteoarthritis, Pharmacogonosy, *Shatapushpadi Upanaha Churna*

INTRODUCTION

According to *Ayurveda*, freedom from disease is not only health to be healthy, a person should be happy physically, mentally, socially and also spiritually. Imbalance of *Doshas* is termed as *Roga*. Among *Tridoshas, Vata* is responsible for almost all disease. In *Vriddhavastha,* all *Dhatus* undergo *Kshaya* thus leading to *Vataprakopa* and making the individual prone to many diseases. Among them, *Sandhigatavata* stands top in the list. *Acharya Charaka* was the first person who described it separately as "*Sandhigata Anila"* but he has not included it under 80 types of *Nanatmaja Vyadhi*.[i] *Acharya sushruta* has said *Vatavyadhias* as *"Maharoga"*.[ii] *Acharya Charaka* was described symptoms of *Sandhigatavata* are *Akunchana-Prasarana Vedana* and *Vatapurna Dritisparsha Shoth.*[iii] The vitiated *Vata Dosha* gets lodged in *Janu Sandhi* and gives raise to *Jansandhigatavata*. Symptoms of *Sandhigatavata* are similar to that of osteoarthritis i.e. joint pain, swelling over the joint, stiffness of joint, difficulty in flexion and extension and crepitation over joint and tenderness.[iv] Therefore disease can be correlated by osteoarthritis of knee joint. Osteoarthritis is the second most common rheumatologic problem and it is the most frequent joint disease with a prevalence of 22% to 39% in India.[v] [vi] Knee OA accounts for more than 80% of the disease's total burden.[vii] Worldwide estimation reported over 100 million people globally suffer from OA, which is one of the most common causes of disability.[viii] OA of the knee is a major cause of mobility impairment, particularly among females.[ix] Till the age of 55 years it occurs equally in both sexes; after 55 the incidences are higher in women. [x] The worldwide prevalence estimate for symptomatic OA is 9.6% among men and almost double (18%) among women.[xi] As there is no known cure for OA, current treatment aims at controlling pain, and improving function and health-related quality of life.[xii] Acetaminophen, aspirin and non-steroidal anti-inflammatory drugs (NSAIDs) are commonly used as pain relief medicines to treat OA. Excessive use of NSAIDs can lead to gastric complications, ulcers, increased risk for hospitalization, adverse side effects, and death.[xiii] [xiv] All such factors show the gravity of the disease and compelled to go for a better remedial search from *Ayurveda. Acharya Charaka* mention *Upanaha Sweda* one of the treatment of *Vatavyadhi*.[xv] *Upanaha sweda* is particularly indicated in numbed, painful, contracted condition, *Sira, Snayu* and *Sandhigatavata.*[xvi]

MATERIALS AND METHODS

Collection, Identification and Authentication of raw drugs

The raw materials were collected from the pharmacy of Gujarat Ayurved University, Jamnagar. All raw drugs were identified and authenticated by the Pharmacognosy laboratory, I.P.G.T & R.A., Jamnagar. The identification was carried out based on the morphological features, organoleptic features and powder microscopy of the individual drugs.[xvii] Later, Pharmacognostical evaluation of *Shatapushpadi Upanaha*

Choorna was the carried out & studied under the Carl zeiss microscope attached with camera, with stain and without stain.

Preparation of the drug

As specific method of preparation is not mentioned for this drug, it was prepared as per common guidelines described in classics and API for *Churna* formulation.

Pharmacognostical study

The Pharmacognostical study comprises of organoleptic study and microscopic study of product i.e. *Shatapushpadi Upanaha Choorna.*

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.[xviii]

Microscopic Study

Shatapushpadi Upanaha Churna was powdered and dissolved with water and microscopy of the sample was done without stain and after staining with Phloroglucinol + HCl. Microphotographs of *Shatapushpadi Upanaha Churna* was also taken under Carl zeiss microscope. [xix]

RESULTS AND DISCUSSION

With increasing demand for safer drugs, attention has been drawn to the quality, safety, efficacy and standards of the *Ayurvedic* drugs.[xx] Hence, there is a need for standardization and development of reliable quality protocols for *Ayurvedic* drugs using modern techniques of analysis.[xxi]

The problems associated with unregulated herbal products highlight the major public health issues that can arise when their herbal ingredients have not been authenticated correctly. Herbal ingredients must be accurately identified by macroscopic and microscopic comparison with authentic material or accurate descriptions of authentic herbs.[xxii]

Quality of raw material is the foremost requirement for the quality assurance of the efficacy of drug. Pharmacognostical testing of a drug helps to establish the authenticity of the drug, based on its organoleptic and morphologic (macroscopic and microscopic) characters. In present study, the ingredients of *Shatapushpadi Upanaha Choorna* was studied under Pharmacognosy laboratory of I.P.G.T. & R.A.,

Jamnagar for their authentication. Specific characteristics of *Shatapushpadi Upanaha Choorna* was studied as morphological study and microscopical study.

Organoleptic characters of *Shatapushpadi Upanaha Churna*

Organoleptic characters contents of *Shatapushpadi Upanaha Churna* like colour, taste, touch, Odour were recorded and shown in **Table- 2**.

Microscopic Study

Diagnostic characters of *Shatapushpadi Upanaha Churna* under the microscope showed Spiral vessel of *Shatapushpa,* Lignified crystal fibre of *Devadaru,* Lignified fibre passing through medullary rays of *Erandmoola,* Starch grains of *Shunthi* etc. Microphotographs are showed in **Plate no 1.**

CONCLUSION

The pharmacognostical analysis of *Shatapushpadi Upanaha Churna* 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 pharmacognostical of *Shatapushpadi Upanaha Churna* are available this study may be beneficial for future researchers and can be used as a reference standard in the further quality control researchers.

Table1. Contents of *Shatapushpadi Upanaha Choorna*

Sr. No.	Drug name	Latin name	Part used	Ratio
1	*Shatapushpa*	*Anethum sowa* Kurz.	fruit	1 part
2	*Devadaru*	*Cedrus deodara* Roxb.	Heart wood	1 part
3	*Nagara*	*Zinziber officinale* Rose.	Rhizome	1 part
4	*Erand*	*Ricinus communis* Linn.	Root	1 part

Table No.2 - Organoleptic characters of *Shatapushpadi Upanaha Choorna*

Character	*Shatapushpadi Upanaha Choorna*
Color	Creamish brown
Touch	Fine
Odour	Slightly aromatic
Taste	Bitter, Astringent

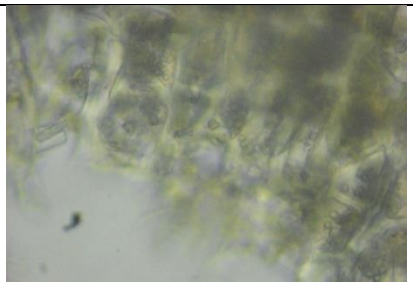
Plate no. 1-Microphotographs of *Shatapushpadi Upanaha Choorna*

Spiral vessel of *Shatapushpa*

Trichom of *Shatapushpa*

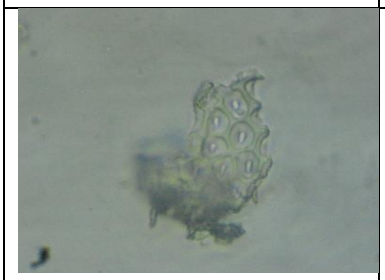
Epidermal cells of *Shatapushpa*

Aluerone grains of *Shatapushpa*

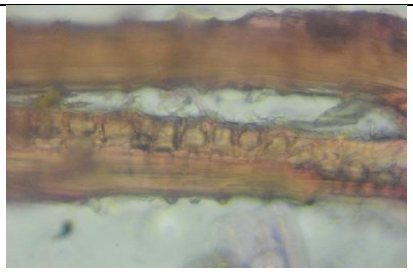


Parenchymal cells with oil globules of *Shatapushpa*

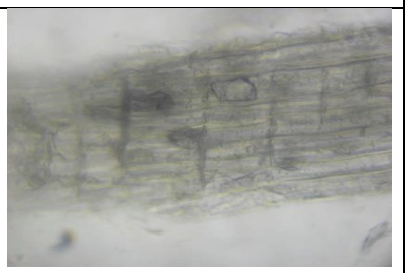
Brown contain of *Shatapushpa*



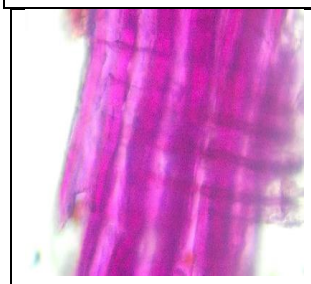
Border Pitted vessels of *Devadaru*



Lignified crystal fibre of *Devadaru*

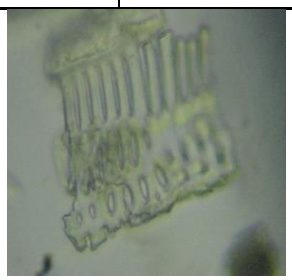


Fibre passing through medullary rays-*Erandmoola*

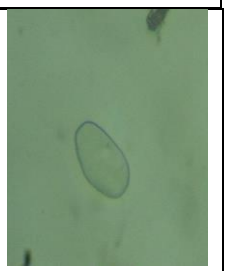


Lignified Fibre passing through medullary rays-*Erandmoola*

Lignified Parenchymal Cell of *Erandmoola*



Pitted vessels of *Shunthi*



Starch grains of *Shunthi*

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