ABSTRACT

According to the Ayurvedic principles, a drug or therapy should not be only having pacifying effect on disease, but also it must not create any adverse effect or complication. A drug should not be only efficacious, but also easily available. Taking all these points into consideration, Yavakshara Taila Uttarabasti was selected in the present study for the management of tubal blockage which has been mentioned as Anubhuta Yoga. Yavakshara is considered as Garbhaprada (fertility creating) and effective in Artavanasha (amenorrhoea) in Ayurvedic treatises and is indicated for internal administration. The present study was aimed at setting up a standard profile of Yavakshara Taila which was prepared using pharmacognostically authenticated raw drugs followed by subjecting it to detailed pharmacognostical and physicochemical analysis as per standard protocol. The observations were systematically recorded. Pharmacognostical findings (Epidermal cells, fibers, Starch grains & aleurone grains, epidermal parenchyma cells, trichom, oil globule, endosperm fragment etc.) confirm the ingredients present in the Yavakshara Taila which support the intended action of the formulation in Artavavaha Srotorodha i.e. tubal blockage.

KEYWORDS: Artavavaha Srotorodha, Pharmacognosy, Phytochemistry, Tubal blockage, Yavakshara Taila.
INTRODUCTION
Causes of infertility include a wide range of both physical and emotional factors. Among the responsible factors tubal factor is the second highest.\textsuperscript{[3]} The management of infertility due to tubal factor in modern includes Tubal microsurgery, Laparoscopic tubal adhesiolysis, fimbrioplasty and tubal surgery, I.V. fertilization, Tubal cannulation etc. But these modalities have their own demerits. It is the need of the time that a safer, more cost effective and complete cure of this sensitive problem should be developed. \textit{Uttarabasti} is a unique procedure mentioned in Ayurvedic classics especially for the treatment of \textit{Vandhyatva} and other gynecological disorders. Tubal blockage has been considered as the \textit{Vata} predominant \textit{Tridoshaja} condition, with \textit{Kapha} as being the next \textit{Dosha}. The drug assumed as effective to open the fallopian tube was considered all, which contain \textit{Vatashamaka}, \textit{Vatakaphashamaka} & \textit{Tridoshaghna} properties. Local administration of any drug containing \textit{Sukshma}, \textit{Laghu}, \textit{Sara}, \textit{Vyavayi}, \textit{Vikasi}, \textit{Pramathi} etc. \textit{Guna}; \textit{Katu Vipaka} & \textit{Ushna Virya} can be assumed to have some effective role in removing tubal blockage. The most suitable method to administer such drug can be Intra Uterine \textit{Uttarabasti}. Hence, it was taken for the study. Only the drugs indicated for internal application were taken under consideration, as the drug was to give by intra uterine route. \textit{Yavakshara} is considered as \textit{Garbhaprada} (fertility creating) and effective in \textit{Artavanasha} (amenorrhoea) in Ayurvedic treatises and is indicated for internal administration.\textsuperscript{[4]} According to Sushruta, tubal blockage can be considered as the deformity of \textit{Kshetra} i.e. the female reproductive system. Correlating fallopian tubes with the \textit{Artavavaha} (Artava-bija-vaha) \textit{Srotas}, its block is compared with the \textit{Sanga Sratodushti} of this \textit{Srotas}.\textsuperscript{[5]}

MATERIALS AND METHODS
Collection of Raw Drugs
The drugs of \textit{Yavakshara Taila} were collected from Pharmacy of Gujarat Ayurved University, Jamnagar.

Preparation of \textit{Yavakshara Taila}
\textit{Yavakshara Taila} was prepared in Pharmacy of Gujarat Ayurved University, Jamnagar. Ingredients are given in Table-1.
Method of preparation of Yavakshara Taila
The Yavakshara Taila was prepared with the same method, as it is mentioned for Apamargakshara Taila.[6] The Ksharodaka was made with the ratio of Kshara & water of 1:16. And then the Taila was boiled in Ksharodaka with ratio of 1:4.

Pharmacognostical Evaluation
As per API Yava and Tila which is used in Yavakshara Taila was identified and authenticated by the Pharmacognosy department. The identification was carried out based on the morphological, organoleptic features and microscopy of the both drugs. Microphotographs were taken by using Carl-Zeiss Trinocular microscope.[7]

Pharmaceutical Evaluation
Following parameters were analyzed for different physico-chemical parameters by today’s routine methods at the pharmaceutical chemistry lab, IPGT& RA, Jamnagar.

Physico-chemical Parameters[8]
1. Organoleptic examination
2. Determination of loss on drying at 105°C
3. Specific gravity
4. Refractive index at room temperature
5. Acid value
6. Saponification Value
7. Iodine Value

RESULTS AND DISCUSSION
Pharmacognostical study
The initial purpose of the study was to confirm the authenticity of the drugs used in the preparation of Yavakshara Taila. For that microscopy of the Yava showed Epidermal cells, fibers, Starch grains & aleurone grains, epidermal parenchyma cells, trichom etc. and Tila showed aleurone grains, oil globules, endosperm fragment, cotyledon etc. Results matched with the API and thus confirmed the genuineness of the drugs used in the finished product.

Organoleptic findings
Organoleptic findings of Yavakshara Taila is given in Table 2.
Pharmaceutical Evaluation

Physico-Chemical parameters of Yavakshara Taila like Loss on drying, Specific gravity, Refractive index, Acid value, Saponification value and Iodine value all were found to be within the normal range. Details are given in Table-3.

Table 1. Contents of Yavakshara Taila.

<table>
<thead>
<tr>
<th>Content</th>
<th>Latin name</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yavakshara</td>
<td>Potasii carbonas</td>
<td>Ksharodaka</td>
</tr>
<tr>
<td>Tila Taila</td>
<td>Sesamum indicum</td>
<td>Oil</td>
</tr>
</tbody>
</table>

Table 2. Organoleptic examination.

<table>
<thead>
<tr>
<th>Properties</th>
<th>Yavakshara Taila</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Yellowish</td>
</tr>
<tr>
<td>Odour</td>
<td>Not specific</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear</td>
</tr>
<tr>
<td>Clarity</td>
<td>Thin, clear</td>
</tr>
</tbody>
</table>

Table 3. Results of the drug analysis on Physico-chemical parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Yavakshara Taila</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss on drying</td>
<td>0.00% W/W</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.9115</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4755</td>
</tr>
<tr>
<td>Acid value</td>
<td>4.28</td>
</tr>
<tr>
<td>Saponification value</td>
<td>132.99</td>
</tr>
<tr>
<td>Iodine value</td>
<td>54.02</td>
</tr>
</tbody>
</table>

Plate -1: Microphotographs of Yava.

<table>
<thead>
<tr>
<th>Epidermal cells with stomata</th>
<th>Fibres</th>
</tr>
</thead>
</table>

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DISCUSSION
In the present study a pharmaceutical preparation of Yavakshara Taila was tried. Its pharmaceutical properties had to be studied; hence the formulation was subjected to minimum Pharmacognostical and Pharmaceutical analysis. Pharmacognostical evaluation of
Yava and Tila showed the specific characteristic features found in microscopy confirm the same and showed that the genuinity of the drugs. For administration of the drug in tubal blockage, a medium is always required. The medium adapted must not be having any adverse effect in Samprapti Vighatana and it would be more appreciable, if it will contain some adjuvant role to open tubal blockage. So, Tila Taila was selected for this purpose, as it has most of the qualities, which were required for the present study. Acharya Sushruta has considered Tila Taila as Yonishula Prashamana & Garbhhashayashodhana. It is Sara, Vyavayi, Vikasi, Krimighna & Vranaghna. All these Guna make it a suitable medium, as it may itself act to open the blockage. Its Vyavayi, Vikasi & Sara Guna may improve the availability of drugs on target organs. Kshara-Taila is mentioned for Stree Roga Adhikar in Bhaishajya Ratnavali. Kshara Taila (Karna Rogadhikar) is being practiced for Intra Uterine Tubal Blockage in some parts of India for its Ushna-Tikshna Property. But for present study, only Yavakshara was selected to prepare Taila to make the preparation of drug easier.

CONCLUSION
Pharmacognostical findings confirm the ingredients of Yavakshara Taila and there is no major change in the microscopic structure of the individual drug during the pharmaceutical processes of preparation of Taila. The drug assumed as effective to open the fallopian tube was considered to have Vatashamaka, Vatakaphashamaka & Tridoshaghna properties. Local administration of the drug containing Sukshma, Laghu, Sara, Vyavayi, Vikasi, Pramathi etc. Guna, Katu Vipaka & Ushna Virya can be assumed to have some effective role in removing tubal blockage. It is inferred that the formulation meets minimum qualitative standards as prescribed by API at preliminary level. The results of this study may be used as the reference standard in further research undertakings of its kind.

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