



## Research Article

### ROLE OF *JALAKUMBHI* IN UTERINE FIBROID - A CLINICAL STUDY

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#### ABSTRACT

Uterine fibroid, a noncancerous growth of the uterus that often appear during childbearing age of female and it is one such gynecological disorder which is posing a major health problem. Regardless of benign neoplastic character, uterine fibroids are responsible for significant morbidity in a large segment of the female population. Ayurvedic texts have described *Mamsaja granthi* which perfectly correlates with benign neoplasm on modern lines. The present study was carried out to evaluate the role of *Jalakumbhi Churna* in the treatment of uterine fibroid. 30 female patients in reproductive age group who were suffering from uterine fibroid were registered for the present research work. 30 patients were divided equally into 2 groups, 15 patients were treated with Trail group drug i.e. by *Jalakumbhi churna* 6gm BD for 2 months and 15 patients were treated with Control group drug i.e. *Nagakesar churna* 6gm BD for 2 months. The diagnoses of uterine fibroids of patients were confirmed by clinical as well as investigation findings. After conducting clinical trial on 30 patients, observation and results were obtained. Statistical analysis shows that both trail and control drug were significantly effective to reduce the cardinal symptoms. As compared to Control drug the effect of Trail drug is better to reduce subjective and objective parameters. Results shows 20% patients were cured and 80% patients were improved after second follow up in trial group, while 26.66% patients were improved and 73.33% patients were not cured after second follow up in control group. Present study concludes that trail drug can definitely be used as adjuvant drug in the management of uterine fibroids.

**KEYWORDS:** Uterine fibroid, *Mamsaja granthi*, *Jalakumbhi*, *Nagakesar*.

#### INTRODUCTION

In present times, there is steady rise in gynecological disorders. Among these, uterine fibroids have got an important place. Uterine fibroids are not only the commonest benign tumour of the uterus but are the commonest benign solid tumour in female [1]. As a consequence of these local pressure effects and bleeding, uterine fibroids rank as a major reason for hysterectomy accounting for approximately one-third of all hysterectomies or about 2,00, 000 hysterectomies per year. [2, 3] These are most common in nulliparous or in those having one child infertility. The prevalence is highest between 35-45 years.

Uterine fibroids are non cancerous tumours consisting of fibers or fibrous tissue that arise in the uterus. It is the most common growth of the female genital tract. These tumours are highly sensitive to oestrogen.[4] They develop following the onset of menstruation, enlarge during pregnancy and decrease and often disappear after menopause when oestrogen

levels are decreased by half. They can be as small as a hen's egg, or commonly grow to the size of an orange or grapefruit. The largest fibroid on record weighed over 100 pounds. Discovery is usually accidental, and coincidental with heavier period, irregular bleeding and or painful periods. [5]

As uterine fibroids are seen mostly during prime working years, they negatively impact women's ability to work. Work absence has been reported by 40% of women. Symptoms like heavy bleeding, pain in abdomen, bladder irritability, etc interfere with home, social and work life of women due to tiredness, weakness, lack of control and unpredictability. Additionally, in women who desire pregnancy, fibroids cause difficulty in conception and also may increase the chances of abortion. [6] In *Ayurvedic* classics, the entity *Granthi*[7] developing in any part of the body simulates the description of tumour, i.e. the disease arising due to excessive, uncommon or peculiar and improper growth

of cells. Further, the disease *Granthi* can be equated with all types of small, glandular or nodular swellings developing mostly due to benign tumours. Specific description of *Granthi* of reproductive system is not available. *Charak* has included *Granthi* in the chapter dealing with *Sotha* due to similarity in basic clinical features.<sup>[8]</sup> He has clearly mentioned that sothas are situated in different body parts; these are many in numbers due to difference in their location, clinical features, names and types.<sup>[9]</sup> This clearly indicates that basically etiopathogenesis, clinical features and treatment of tumors of reproductive system are identical to the tumors of any other body part; however, few clinical features present due to specific location of disease had to be envisaged. *Ayurvedic* texts have described *Mamsaja granthi*<sup>[10]</sup> which perfectly correlates with benign neoplasm on modern lines. Keeping the above facts in mind an attempt has been made to find alternative drug in *Ayurveda* to combat this dreadful disease. From the different drugs mentioned from *Ayurvedic* classics *Jalakumbhi* (*Pistia Stratiotus*)<sup>[11]</sup> is selected for this research work.

### Aims and Objectives

To evaluate efficacy of *Jalakumbhi* in the management of uterine fibroids.

### Materials and Methods

30 patients of reproductive age group, attending the OPD and IPD of *Prasooti tantra and Striroga* department, Major S. D. Singh P. G. Ayurvedic Medical College & Hospital, Farrukhabad, fulfilling the criteria for diagnosis and selection were incorporated into the study. For the preparation of *Jalakumbhi churna* raw drug were purchased from the local markets of Farrukhabad and Kanpur district, U.P., India. Under the supervision of *Dravyaguna* specialist. *Jalakumbhi churna* was prepared in the pharmacy of Major S. D. Singh P. G. Ayurvedic Medical College & Hospital, Farrukhabad.

### Treatment Protocol

**GROUP A (Treatment group):** It consists of 15 patients who were given trial drug (*churna of jalakumbhi*) in a dose of 6 gm BD for 2 months.

**GROUP B (Control group):** It consists of 15 patients who were given *Nagkesar Churna* in a dose of 6 gm BD for 2 months.

### Follow up

The patients were advised to take *pathya ahaar*. This treatment protocol was continued for a period of two months. Patients were followed twice regularly at the end of each month.

### Inclusion criteria

- Female patients of Age 25-45 years
- Single or multiple uterine fibroids
- Size upto 8 cms

- Submucous fibroids
- Intramural fibroids
- Subperitoneal / Subserous fibroids.

### Exclusion criteria

- Broad ligament fibroids
- Pendunculated fibroids
- Pregnancy
- Systemic diseases
- Malignant diseases

Routine hematological investigations, USG abdomen pelvis and were done before and after the treatment.

### Assessment Criteria

#### Subjective Parameter

- P/V bleeding
- Menstrual abnormalities
- Pain in lower abdomen
- Backache

#### Objective parameter

- Size of fibroids
- Pads used/ day

Patients were randomly selected from the OPD and IPD. A detailed history of all the cases including age, occupation, socio-economic status, parity, menstrual history and obstetrical history were recorded on a specially designed research care sheet.

A physical examination of all the cases were carried out including general body built, height, weight, *Dashavidha pareeksha*, P/A examination, pelvic examination including P/S and bimanual examination among married women were done to rule out any structural abnormalities of genital organs.

Patients were followed regularly twice one at the end of each month.

### Assessment Parameters

#### 1) Duration of blood loss

|            |     |
|------------|-----|
| 1-5 days   | - 1 |
| 6-10 days  | - 2 |
| 11-15 days | - 3 |

#### 2) Interval of blood loss

|                |  |
|----------------|--|
| Normal         | : 28-32 days   |
| Frequent       | : menstrual bleeding occurring at 21 days or less                        |
| Intermenstrual | : bleeding occurring at 15-16 days cycle or in between 2 menstrual cycle |
| Delayed        | : menstrual bleeding occurring more than 35 days                         |

**3) Amount of blood loss**

|          |   |   |
|----------|---|---|
| Mild     | : | 1 |
| Moderate | : | 2 |
| Severe   | : | 3 |
| Absent   | : | 0 |

**4) No of pads/ day**

|                |   |   |
|----------------|---|---|
| 1-2 pads /day  | : | 1 |
| 2-3 pads/day   | : | 2 |
| 4-5 pads / day | : | 3 |

**5) Pain in lower abdomen**

|  |   |   |
|--|---|---|
| Absent   | : | 0 |
| Mild (subsides with rest only)                         | : | 1 |
| Moderate (subsides with medicine)                      | : | 2 |
| Severe (pain does not subside even by use of medicine) | : | 3 |

**6) Backache**

|         |   |   |
|---------|---|---|
| Present | : | 1 |
| Absent  | : | 2 |

**7) Size of fibroid**

|         |   |   |
|---------|---|---|
| 0-1 cms | : | 1 |
| 1-2 cms | : | 2 |
| 2-4 cms | : | 3 |
| 4-6 cms | : | 4 |
| 6-8 cms | : | 5 |

**Properties of Jalakumbhi (Pistia Stratiotus) [12]**

|            |   |  |
|------------|---|--|
| Rasa       | : | Tikta, Madhur  |
| Guna       | : | Laghu, Ruksha  |
| Virya      | : | Sheeta   |
| Vipaka     | : | Madhur   |
| Doshakarma | : | Tridoshashamak   |
| Upayogas   | : | Jwara, Daha, Sosha, Mutrakrucha, Kasa, Swas, Arsha, Vibandha, Galganda, Twak rogas |

**Chemical Analysis of Jalakumbhi (Pistia Stratiotus)**

It contains the following

Ash – 31%

Water – 6%

Water contains dissoluble shar. This shar is made up of following:

Potassium chloride – 73

Potassium sulphate – 22%

Cadmium, chromium, Cobalt, Copper, Iron, Lead, Nickel, Zinc, Manganese, Calcium, Sodium and Potassium, Selenium, Beta- carotene.

Various studies done on Jalakumbhi show that:

Root is emollient, laxative, and diuretic. Study on leaves showed presence of alkanes, flavonoids, and sterols. Study isolated for the first time: stigmasta-4, 22-dien-3-one, stigmesterol, stigmasteryl state and palmitic acid. Pistia stratiotus leaves extract, function as an anti oxidant.

**Method of preparation of Jalakumbhi churna**

A dry powder, filtered through a fine cloth is called as *churna*. According to *Acharya Sarangadhara*, *Churna* is a fine powder of completely dried drug which is filtered through cloth. The drug, taken in completely dry form is pounded well in *Ulukhala yantra* and sieved through different sized sieves.

**Shelf life**

6 months. (2 months according to *Sarangdhar*).

**Follow-up study**

Patients were followed regularly twice, at the end of each month.

**Observations and Results**

The present study was carried out in total 30 patients in two groups as prospective study by simple randomized method of selection. The patients were tested in this clinical trial for drug efficacy. To evaluate the effect of trial treatment on uterine fibroid, the data's were collected and analyzed on the basis of:

1. Demographic findings
2. Patient clinical findings
3. Statistical analysis of subjective & objective parameters.

The following observations were made during the course of the present clinical research.

**Table 1: Demographic Observations**

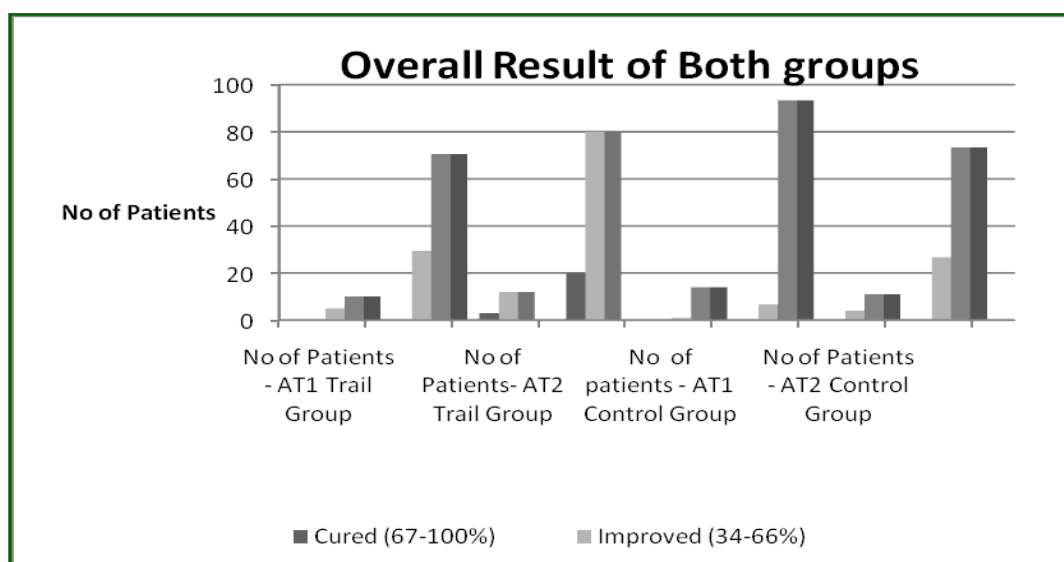
| Geographic observation       | Predominance         | Percentage | No. of patients |
|------------------------------|----------------------|------------|-----------------|
| Age                          | 36-40 yrs            | 43.33%     | 13              |
| Age of Menarche              | 11-14 yrs            | 83.33%     | 25              |
| Socio-economic status        | Middle class         | 63.33%     | 19              |
| Marital Status               | Married              | 70%        | 21              |
| Parity                       | 1 child and No child | 36.66%     | 11              |
| Educational Status           | Literate             | 73.33%     | 22              |
| Occupational Status          | Professional         | 50%        | 15              |
| Diet                         | Mixed                | 67%        | 20              |
| Mental status                | Stressed             | 73.33%     | 22              |
| Prakruti (nature of patient) | Kaphaja              | 50%        | 15              |
| Family history               | Not Present          | 83%        | 25              |
| Habitat                      | Anupa                | 67%        | 20              |

**Table 2: Comparison of Results of Parameters in both Groups at 2<sup>nd</sup> Follow up**

| Parameter              | Mean BT-AT of A | Mean BT-AT of B | Mean Difference | SD   | SEM  | t     | P      | Remarks            |
|------------------------|-----------------|-----------------|-----------------|------|------|-------|--------|--------------------|
| Duration of Blood Loss | 1.33            | 0.7             | 0.63            | 0.54 | 0.19 | 3.2   | <0.01  | Significant        |
| Interval of Blood Loss | 0.6             | 0.73            | 0.13            | 0.66 | 0.23 | 0.54  | <0.10  | Not Significant    |
| Amount of Blood Loss   | 1.46            | 0.86            | 0.6             | 0.58 | 0.2  | 2.91  | <0.01  | Significant        |
| No of Pads             | 1.33            | 0.6             | 0.73            | 0.67 | 0.24 | 3.04  | <0.01  | Significant        |
| Pain in Lower Abdomen  | 3.13            | 0.53            | 2.6             | 0.56 | 0.2  | 12.93 | <0.001 | Highly Significant |
| Backache               | 1               | 0.13            | 0.87            | 0.52 | 0.18 | 4.6   | <0.01  | Significant        |
| Size of Fibroid        | 1.13            | 0               | 1.13            | 0.06 | 0.02 | 53.95 | <0.001 | Highly Significant |

**Table 3: Overall Effect of Treatment**

| Trail group       | AT1       |      |           |      | AT2       |      |           |      | Control group |      |           |      |
|-------------------|-----------|------|-----------|------|-----------|------|-----------|------|---------------|------|-----------|------|
|                   | AT1       |      | AT2       |      | AT1       |      | AT2       |      | AT1           |      | AT2       |      |
|                   | No of Pts | %    | No of Pts | %    | No of pts | %    | No of Pts | %    | No of Pts     | %    | No of Pts | %    |
| Improvement       |           |      |           |      |           |      |           |      |               |      |           |      |
| Cured (67-100%)   | 0         | 0    | 3         | 20.0 | 0         | 0    | 0         | 0    | 0             | 0    | 0         | 0    |
| Improved (34-66%) | 5         | 29.4 | 12        | 80.0 | 1         | 6.6  | 4         | 26.6 | 4             | 26.6 | 11        | 73.3 |
| Not cured (0-33%) | 10        | 70.5 | 0         | 0    | 14        | 93.3 | 11        | 73.3 | 11            | 73.3 | 11        | 73.3 |



In the present study overall effect of treatment showed that, in trial group after first follow up 29.45% improved and 70.55% patients have no change while in placebo group after first follow up 6.67% patients improved and 93.33% patients have no change. After second follow up 20% patients were cured and 80% were improved in trial group and in placebo group 26.66% patients improved and 73.33% were cured.

## DISCUSSION

The work undertaken for the present study is Uterine Fibroid. Even though the modern treatment has developed rapidly still present generation is switching towards *Ayurveda* which offers better solutions, at this juncture an attempt has been made to provide a better assistance for this painful disorder. While searching the literature one finds that Uterine fibroid is the nearest clinical correlation of *Mamsaja granthi*. *Sushruta* has described *Granthi*, *Apachi*, *Gandamala in Nidana* as well as in *Chikitsa Sthana*.<sup>[13]</sup> *Granthi* description appears to be containing few of the benign conditions. It is caused because of *Dushti of Tridosha*, *Mamsa*, *Meda* and *Rakta dhatus* that manifests as round, raised, nodular

swelling. The present clinical study entitled "Role of *Jalakumbhi* in Uterine fibroid" was aimed to evaluate the role of *Jalakumbhi* on uterine fibroids. In the present clinical study 15 cases had been treated with trial drug after being diagnosed with uterine fibroids. The observations were made on the different parameters including clinical findings. The incidental study like age of patients, marital status, and age of menarche, parity, socio-economic status, *Prakruti*, family history and diet of patients were carried out. And even incidence according to symptomatology study was carried out which has been shown by table 1 & 2, where the improvement in Duration of blood loss in trial group was 57.08% while in placebo group it was 28.85% after the second follow up is seen, Interval of blood loss in trial group was 37.50% while in placebo group it was 37% after the second follow up is seen, Amount of blood loss in trial group was 50.10% while in placebo group it was 31.07% after the second follow up is seen, Number of pads in trial group was 45.39% while in placebo group it was 20.97% after the second follow up is seen, Pain in lower abdomen in trial group was 65% while in placebo group it was 20.94% after

the second follow up is seen, Backache in trial group was 44.32% while in placebo group it was 6.1% after the second follow up is seen, Size of fibroid in trial group was 44.66% while in placebo group it was 0% after the second follow up is seen. Overall effect of therapy in the present study shows that *Jalakumbhi* helps in reducing the symptoms, and trial group is more effective than control group (Table: 3). The results are encouraging though percentage of the patient was 20% to get cured from uterine fibroid.

#### Probable mode of action of drug

In the manifestation of *Granthi* there is vitiation of *Tridosha*, which vitiates the *Dushya rakta*, *Mamsa* and *Medas*, impairment of *Agni* (due to *Ama*) and causes suppression of *Vyadhi kshamata* and *Sroto vaigunya*. *Jalakumbhi* according to its *Doshakarma*, is *Tridosha shamaka*. In *Susruta Samhita Chikitsa* 1/10 the treatment of *Granthi* is described same as that of *Sopha*<sup>[14]</sup>. For *Sopha*, the line of treatment is *Virechan*. Again, *Granthi* comes under *Virechan yogya vyadhis*. The *Karma* of *Jalakumbhi* is *Mrudu virechan* and *Anulomana*. Due to its detoxification action by *Virechan karma Jalakumbhi* acts on fibroid. According to studies, *Jalakumbhi* consists of flavonoids. Flavonoids have got anti oestrogenic action which helps to cure fibroids that are caused because of hyper oestrogenic state. Again, for the treatment of fibroids, antioxidants play an important role. *Jalakumbhi* consists of following antioxidants, Betacarotene<sup>[15]</sup>, Selenium and Zinc.

#### CONCLUSION

Oral administration of *Jalakumbhi churna* for two months helped nearly 20% patients of female in uterine fibroid to get cured. No adverse side effects were observed during and after treatment. The results are encouraging but rate of cured patients is low. Hence it is suggested to plan further study by giving the drug in other modality of administration and should be carried out on a large scale so that satisfactory results are obtained.

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