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**Original Research Article**

# Management options of uterine leiomyoma patients admitted to a tertiary care hospital

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## ABSTRACT

**Background:** Uterine fibroids (UFs), or uterine leiomyomas (UL), are the most common benign tumors of the female reproductive system, affecting a significant proportion of women of reproductive age. This study aims to evaluate the management strategies of UFs to optimize treatment approaches and patient outcomes.
**Methods:** This cross-sectional study observational study was conducted department of obstetrics and gynecology, Shaheed Suhrawardy medical college hospital, Dhaka, from January 2022 to July 2022. A total of 100 women with fibroid were considered as study subjects by purposive sampling technique. Data analysis was done by statistical package of social sciences (SPSS) version 20.0.
**Results:** The study highlights that UFs affect 20% to 80% of women by the age of 50, with an estimated global prevalence of 171 million cases. The incidence is 2 to 3 times higher among Black women than White women and first-degree relatives have a 2.2 times greater risk of developing fibroids. Imaging studies suggest that 3% to 7% of untreated fibroids in premenopausal women regress over 6 months to 3 years. Hysterectomy, the definitive treatment, accounts for 40% to 60% of all hysterectomies performed due to fibroids.
**Conclusions:** In this study, it is observed that women with leiomyoma present with variable signs and symptoms. Menstrual disturbance, dysmenorrhea, pain in the lower abdomen, and anemia were the common clinical features. Almost half of the patients were managed by medical treatment whereas the rest of the portion was managed by either medical or surgical management and a few cases were managed by both medical and surgical treatment.

**Keywords:** Uterine leiomyoma, Hysterectomy, Oral contraceptive pill, Dysmenorrhea

## INTRODUCTION

Uterine fibroids (UFs), also referred to as UL, are the most prevalent benign tumors of the female reproductive system, particularly among women of reproductive age.[1] It is estimated that between 20% and 80% of women will develop fibroids by the age of 50, with approximately 171 million women affected globally. The incidence of UL is reported to be two to three times higher in Black women compared to White women, even after adjusting for age and other risk factors. This increased incidence is observed across nearly all age groups.[2] Genetic predisposition also plays a role, as UL are 2.2 times more common in first-degree relatives, with individuals at an increased risk if there is a family history of the condition. Epidemiological studies utilizing universal ultrasound screening provide estimates of prevalence and incidence, while hospital discharge records and self-reported clinical diagnoses offer more reliable measures of disease burden and healthcare costs.[3] This condition results in abnormal uterine bleeding, pelvic pain or pressure, bowel dysfunction, urinary frequency and urgency, urinary retention, low back pain, constipation, and dyspareunia. In addition, they may compromise reproductive functions, possibly contributing to subfertility, infertility, early pregnancy loss, and later pregnancy complications.[4]

Histologically, fibroids are benign tumors composed of disorganized myofibroblasts embedded within a substantial extracellular matrix, which constitutes a significant portion of the tumor mass. The exact mechanisms underlying fibroid development remain uncertain. Myomas may occur as solitary or multiple lesions, varying in size, location, and vascular supply. They are generally categorized into three subtypes based on their anatomical position: subserosal, intramural, and submucosal.[5] The approach to treatment is typically individualized, considering factors such as symptom severity, fibroid size, and location, the patient's age, proximity to menopause, future fertility aspirations, treatment availability, and physician expertise. Management options include medical therapy, surgical intervention, or a combination of both. Imaging studies suggest that 3% to 7% of untreated fibroids in premenopausal women may regress over six months to three years.[6] As menopause often leads to fibroid shrinkage and symptom relief, women nearing menopause may opt to delay treatment until natural regression occurs.[7] Medical management is primarily used for temporary symptom control and preoperative preparation, aiming to reduce fibroid size and improve hematological status. Several pharmacological options exist, with gonadotropin-releasing hormone analogs (GnRHa) being FDA-approved for temporary preoperative use to minimize fibroid-related blood loss and correct iron-deficiency anemia. Other medications, including selective estrogen receptor modulators (SERMs), antiprogestins, aromatase inhibitors (AIs), cabergoline, danazol, and gestrinone, have been studied with varying efficacy.[8] Surgical intervention remains the gold standard for definitive treatment. Hysterectomy is the most conclusive procedure, accounting for 40% to 60% of all hysterectomies performed due to the presence of fibroids. However, myomectomy is frequently preferred in women who wish to preserve fertility. In recent years, minimally invasive techniques such as uterine artery embolization (UAE), magnetic resonance-guided focused ultrasound surgery (MRgFUS), and myolysis have emerged as alternative therapeutic options.[9]

## METHODS

This cross-sectional study observational study was conducted department of obstetrics and gynecology, Shaheed Suhrawardy medical college hospital, Dhaka, from January 2022 to July 2022. Women who got admitted into the hospital due to fibroid were considered as the study population. A total of 100 sample sizes were considered as study subjects by purposive sampling technique. Informed written consent was obtained from the patients and/or guardians. Face-to-face interview was conducted by using a semi-structured questionnaire containing socio-demographic parameters and relevant information (regarding fibroid uterus and their management) was collected from patient registry files and documents analysis. After collection of all the required data, these were checked, verified for consistency, and tabulated using the SPSS/PC 20.0 software. Statistical significance is set as a 95% confidence level at a 5% acceptable error level. Data were presented as the proportion of valid cases for discrete variables and as means±SD categorical variables. Ethical clearance was taken from the ethics committee of Shaheed Suhrawardy medical college hospital.

### *Inclusion criteria*

Patients with age >18 years of age, diagnosed case of fibroid and willing to participate were included.

### *Exclusion criteria*

Post-menopausal women, pregnant women, asymptomatic fibroid patients, patients having other diseases that may affect the coagulation profile, severely ill and not willing to participate were excluded.

## RESULTS

A total of 100 patients of fibroid were included in the study. The mean age of the patients was 38.48±8.37 years. A maximum of 47% of cases were in the 41-50 years age group, 36% cases were in the 31-40 years age group, 15% cases were in the 18-30 years age group and only 2% were in the>50 years age group. The minimum age of the patients was 18 years and the maximum age of the patients was 54 years (Table 1).

**Table 1: Age distribution of the patients, (n=100).**

| Age group (in years) | N | Percent (%) |
|---|---|---|
| **18-30** | 15 | 15.0 |
| **31-40** | 36 | 36.0 |
| **41-50** | 47 | 47.0 |
| **>50** | 02 | 2.0 |
| **Mean** | 38.48±8.37 | |

Among the study cases, menstrual disturbance was present in 78% of cases, dysmenorrhoea was present in 28% of cases, pain in lower abdomen was present in 26% cases, dyspareunia was present in 14% cases, urinary frequency was present in 16% cases, abdominal lump was present in 38% cases and anemia was present in 42% cases (Table 2).

**Table 2: Clinical features of the patients, (n=100).**

| Clinical features* | N | Percent (%) |
|---|---|---|
| **Menstrual disturbance** | 78 | 78.0 |
| **Dysmenorrhoea** | 28 | 28.0 |
| **Pain in the lower abdomen** | 26 | 26.0 |
| **Dyspareunia** | 14 | 14.0 |
| **Urinary frequency** | 16 | 16.0 |
| **Abdominal lump** | 38 | 38.0 |
| **Anemia** | 42 | 42.0 |
| **Edema** | 10 | 10.0 |

*Multiple response

Among the 100 study cases, 27% cases used barrier methods, 12% used injectable contraceptives, 6% applied natural contraceptive methods, 11% used IUCD, 15% used OCP for contraception and 7% used permanent contraceptive methods. Seven patients did not use any contraceptive method and 14 patients were unmarried (Table 3).

**Table 3: Contraceptive history of the patients, (n=100).**

| Methods of contraception | N | Percent (%) |
|---|---|---|
| **Barrier methods** | 27 | 27.0 |
| **Injectable contraceptive** | 12 | 12.0 |
| **Natural contraceptive** | 06 | 6.0 |
| **IUCD** | 11 | 11.0 |
| **OCP** | 15 | 15.0 |
| **Permanent** | 07 | 7.0 |
| **Did not use any method** | 07 | 7.0 |
| **Unmarried** | 14 | 14.0 |

Among the study cases 4% cases had BMI <18.50, 56% cases had BMI 18.50-24.90, 34% cases had BMI 25-29.90 and 6% cases had BMI >30 (Table 4).

**Table 4: BMI status of the patients, (n=100).**

| BMI group (kg/m$^2$) | N | Percent (%) |
|---|---|---|
| **<18.50** | 04 | 4.0 |
| **18.50-24.90** | 55 | 55.0 |
| **25-29.90** | 32 | 32.0 |
| **>30** | 09 | 9.0 |

Out of 86 married cases, 2.33% were nulliparous, 53.49% were primiparous and 44.19% were multiparous women (Table 5).

**Table 5: Para of the patients, (n=86).**

| Para of the cases | N | Percent (%) |
|---|---|---|
| **Nullipara** | 02 | 2.33 |
| **Primipara** | 46 | 53.49 |
| **Multipara** | 38 | 44.19 |

Among 100 fibroid cases, 49% were managed by medical treatment, 42% were managed by surgery and 9% were managed by both medical and surgical treatment. A total of 58 cases received medical treatment. Among them 22 (37.90%) were treated with oral progesterone, 13 (22.40%) were treated by OCP, 09 (15.50%) were treated by SPRms, 07 (12.10%) were treated by DMPA and 07 (12.10%) were treated by LNG-IUS.

A total of 51 cases underwent surgery. Among them, 19 (41.76%) underwent total abdominal hysterectomy and 04 (7.84%) underwent vaginal hysterectomy and 28 (50.98%) underwent myomectomy (Table 6).

**Table 6: Management protocol of the patients, (n=100).**

| Management option | | N | Percent (%) |
|---|---|---|---|
| **Only medical** | Oral progesterone | 19 | 19.0 |
| | OCP | 11 | 11.0 |
| | SPRMs | 08 | 8.0 |
| | DMPA | 7 | 7.0 |
| | LNG-IUS | 4 | 4.0 |
| | Overall | 49 | 49.0 |
| **Surgical** | TAH | 16 | 16.0 |
| | Vaginal hysterectomy | 22 | 22.0 |
| | Myomectomy | 04 | 4.0 |
| | Overall | 42 | 42.0 |
| **Both** | Oral progesterone and myomectomy | 03 | 3.0 |
| | OCP and TAH | 02 | 2.0 |
| | LNG-IUS and myomectomy | 02 | 2.0 |
| | SPRMs and myomectomy | 01 | 1.0 |
| | LNG-IUS and TAH | 01 | 1.0 |
| | Overall | 09 | 9.0 |

*OCP-Oral contraceptive pill, SPRMs-Selective progesterone receptor modulator, DMPA-depot medroxyprogesterone acetate, LNG-IUS-levonorgestrel-releasing intrauterine system, TAH-Total abdominal hysterectomy.

## DISCUSSION

The mean age of the cases was 38.48±8.37 years. Among the study cases, 15% were in the 18-30 years age group, 36% were in the 31-40 years age group, 47% of the study cases were in the 41-50 years age group and only 2% were in 51-60 years age group. This finding is similar to the finding of Srilatha and associate Yu and associates and Wesley and associates.[10-12] According to Yu and co-researchers, a maximum of 45.60% of cases were in the 40-49 years age group and according to Srilatha and co-researcher, 57.30% of cases were in the 40-59 years age group which is consistent with the finding of this study. According to Mcwilliams and co-researchers, and Baird and associates increased parity decreased the risk of uterine leomyoma.[13,14] Consistent with their findings this study also reveals a maximum of 62% of the study cases in nulliparous and primiparous parity group. During parturition, ischemia of fibroid tissues and during postpartum remodeling selective apoptosis of fibroid tissues may be the possible reason for this decreased prevalence of uterine leiomyoma in multiparous women.[2,11] The mean BMI of the study cases was 23.77±3.75 kg/m$^2$. Among the study cases, 41% had a BMI of more than 25 kg/m$^2$. A study conducted by Shikhora and co-researchers, Ofori and co-researchers, and Bizak and co-researchers also found high BMI as a risk factor for uterine fibroid in their respective study.[14-16] Overweight and obese women have relatively lower estrogen levels and they have relatively higher amounts of fat tissues that act as an endocrine gland and produce proinflammatory

cytokines these may have a positive role in the development of uterine leiomyoma or fibroid in overweight and obese patients.[17] According to Bizjak associated uterine fibroid was relatively lower in OCP users.[15] Consistent with their findings this study reveals almost similar results. Among 100 study cases of this study, only 15% were OCP users and 12% were injectable contraceptive users. Rests 27% used barrier methods, 6% used natural methods, 11% used IUCD and 7% used permanent methods. Akhter and associates also found almost similar results in their study.[16] Among their study cases, only 16% were oral contraceptive pill users and 8% were injectable contraceptive users. Menstrual disturbance is the most common clinical feature that was present in 78% of cases. Dysmenorrhoea was present in 28% of cases, pain in the lower abdomen was present in 26% of cases, dyspareunia was present in 14% of cases, urinary frequency was present in 16% of cases, abdominal lump was present in 38% of cases, and anemia was present in 42% cases. This finding is similar to the findings of Akhter and co-researchers, Kulkarni and co-researchers, and Rajendran and co-researchers.[18-20] According to Kulkarni among their uterine fibroid study cases, 76% had menstrual disturbance, 36% had dysmenorrhoea, 33% had abdominal pain and 15% had urinary symptoms. Akhter and associates also observed menstrual disturbance in 74% of cases.[18] Among their study cases, the abdominal lump was present in 40% of cases, dyspareunia was present in 26% of cases and urinary frequency was present in 16% of cases. Among 100 study cases, 49% were managed by medical treatment, 42% were managed by surgery and 9% were managed by both medical and surgical treatment.

The selection of treatment options depends on the severity of symptoms, parity, size of tumor, and patient's desire for future fertility. Medical management was usually adapted for those patients whose family is not complete and whose symptom severity was relatively lower. Medical management includes using oral progesterone (37.90%), OCP (22.40%), selective progesterone receptor modulators (SPRMs) (15.50%), DMPA (12.10%), and LNG-IUS (12.10%). A study conducted by Sing and associates and Sohn and associates also found promising effects of these drugs on uterine fibroid in their respective studies.[21,22]

Among the study cases total abdominal hysterectomy was performed in 34 (66.67%) cases, vaginal hysterectomy was performed in 04 (7.8%) cases and myomectomy was done in 13 (25.49%) cases. So, total abdominal hysterectomy is the most common surgical option that was performed in uterine fibroid patients. Das and associates, Akhter and associates, and Kulkarni and associates also found abdominal hysterectomy as the commonest surgical option for uterine fibroid among their respective studies.[18,19,23] According to Das and associates among their study cases of uterine leiomyoma myomectomy was performed in 54.90% of cases, total abdominal hysterectomy was performed in 37.25% of cases, and vaginal hysterectomy was performed in 12% of cases.

### *Limitations*

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

## CONCLUSION

In this study, it is observed that women with leiomyoma present with variable signs and symptoms. Menstrual disturbance, dysmenorrhea, pain in the lower abdomen, and anemia were the common clinical features. Almost half of the patients were managed by medical treatment whereas the rest of the portion was managed by either medical or surgical management and a few cases were managed by both medical and surgical treatment.

### *Recommendations*

Management of UFs should be individualized based on symptom severity, fibroid characteristics, and patient priorities. While hysterectomy remains definitive, less invasive options like myomectomy, UAE, and MRgFUS should be considered, especially for fertility preservation. Medical therapy offers temporary relief or preoperative benefits, and watchful waiting may be suitable for perimenopausal women. Further research is needed to refine treatment protocols and assess long-term outcomes of emerging therapies.

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