



UTERINE FIBROIDS: CAUSES AND TREATMENT

B.Pallavi^{1*}, B. Rekha¹, D. Nanditha Reddy¹, P.Swetha¹, G. Ramya Balaprabha², Rama Rao³

Department of Pharm. D interns, CMR College of Pharmacy, Kandlakoya, Hyderabad, India

Assistant professor of Pharm.D, CMR College of Pharmacy, Kandlakoya, Hyderabad, India

Professor and Principal, CMR College of Pharmacy, Kandlakoya, Hyderabad, India

Email ID: pallavibejjarapu@gamil.com, rekhaburra83@gmil.com, nandithareddy886@gmail.com,

pswethanani@gamil.com, ramyapharmd66@gmil.com

ABSTRACT

Introduction: Uterine fibroids are noncancerous fibroids. These fibroids grow on the uterus which appears often during the childbearing year. They are also called as leiomyomas or myomas. Fibroids are benign growths. They develop from the muscle tissue of the uterus]. They usually form in multiple numbers.

1. INTRODUCTION

Uterine fibroids are noncancerous fibroids. These fibroids grows on the uterus which appears often during the childbearing year [1].They are also called as leiomyomas or myomas. Fibroids are benign growths. They develop from the muscle tissue of the uterus [2]. They usually form in various numbers. The size usually extends from a few millimeters to 20 cm and more in diameter [3].

The etiology of uterine fibroids is unclear but they seem to develop when estrogen levels increases more than the normal range [4]. They form more commonly from age 30 to the age were menopause begins. Inspite of their benign nature, fibroids undergo rapid and significant growth [5].

Nearly 80% women of reproductive age were diagnosed with uterine fibroids. In past fibroids remained undiagnosed because they are very asymptomatic [6]. They can be seen in women who are near to menopause and regress after menopause.

Fibroids can be classified based on the location on the layers of the uterus and they can be single or multiple [7]. A study showed that they can be more commonly formed in the women of age between 35-50 years. They usually don't show any symptoms.

SIZE AND LOCATION:^[8]

Uterine fibroids vary in sizes. They can be ranging from microscopically small to pounds in weight. Some fibroids are so big enough to fill the womb. A single or multiple fibroids can form at a single time.

Fibroids are classified based to their location:

- **Myometrial** in the uterine wall
- **Sub mucosal** under the uterine lining
- **Sub serosal** under the outside uterine lining
- **Pedunculated** on a long stalk inside or outside of the uterus.

SINGS AND SYMPTOMS:

- Heavy and prolonged bleeding
- Unpredictable and irregular bleeding
- Frequent periods^[9]
- Frequent urination
- Low back pain

- Chronic vaginal discharge
- Pain during sex
- Abdominal distension
- Constipation^[10]
- Inability to urinate or completely empty the bladder
- Bloating
- Pelvic pain^[11]

RISK FACTORS:

- Cigarette smoking
- Alcohol and Caffeine
- Dietary factors
- Luteinizing hormone[12]
- PCOD
- Stress
- Oral contraceptives [13]
- Decreased physical activity
- Stress
- Age
- Genes
- Diabetes
- Hypertension[14]

CAUSES:

- Uterine fibroid occurs when uterus muscle cells multiply too many times. When the cells multiply, lumps of various shapes and sizes are formed. These lumps will grow either inner or outside the lining of the uterus^[15].
- Hormones such as estrogen and progesterone play a role in the growth of fibroids. This is the reason why fibroids tend to shrink after menopause, when production of these hormones decreases^[16].
- People with hypertension and poly cystic ovarian syndrome are more likely to develop uterine fibroids.
- Uterine fibroids can also cause in people who got their first menstruation at early age.
- People with high consumption of red meat and beer.
- They can also be inherited genetically.

DIAGNOSIS:

- Gynecologist will conduct a **physical examination** where pelvic region is observed. They can sense an irregularly shaped uterus when fibroids are present in the uterus.
- For further confirmation some test will be done to decide if there is a fibroid or not.
- **Transvaginal or pelvic ultrasound:** In this type of ultrasound a probe connected to a computer is inserted into the vagina and sound waves are passed. Then the probe is gently moved through vagina into uterus. This probe bounces the sound waves and forms a sonogram which gives a clear picture of fibroids.
- **Endometrial biopsy:** This test is done without anesthesia. A speculum is inserted into vagina to hold it open so that cervix can be viewed. Cervix will be cleaned with a solution. Another instrument is placed to hold the cervix steady. Then a thin suction tube is inserted into the uterus to collect the tissue sample from the uterus. Then the sample will be sent to pathologist for the analysis of the cell. This procedure will usually take 5-15 minutes.

- **Laparoscopy:** During laparoscopy a small cut is done to the belly. A telescope is inserted into the opening into the pelvis and uterus. Then another tool is inserted to remove the fibroids from the uterus. This procedure is little painful so anesthesia is given [17].
- **Hysteroscopy:** This test is done using a long flexible tube called hysteroscope. Hysteroscope is inserted into the vagina through cervix and reaches the uterus. A fiber-optic light source and a tiny camera is fixed to the tube to give a clear image. The uterus is filled with saline and carbon dioxide to keep the uterine cavity steady and provide better viewing.
- **Hysterosalpinography:** This test uses a dye to show the uterine cavity, fallopian tubes. X-ray image of uterus is taken. Fluoroscopy converts x-ray image into video. A speculum is inserted into the vagina up to the uterus [18].
- **Abdominal ultrasound:** Ultrasound uses a transducer that sends sound waves at a high frequency. This transducer is placed on the skin and sound waves moves through the body. Then the sound waves bounce and return to the transducer. This transducer convert the waves into an image[19].

2. TREATMENT

1. **Anti inflammatory pain killers:** They reduce menstrual bleeding and pain which is caused due to fibroids. This is the most commonly used method for women who were suffering from pelvic pain.
2. **Gonadotropin-releasing hormone agonist:** These are used to shrink the fibroids. They lower the estrogen levels and also prevent periods to prepare for surgery. But this cannot be administered more than a year.
3. **Oral contraceptive pills :** By using oral contraceptive pills can reduce bleeding in women with uterine fibroids
4. **Progesterone-containing agents:** Some devices such as pills, implants, injections or intrauterine devices can control bleeding.
5. **Uterine artery embolization:** It is also called as uterine fibroid embolization. This procedure shrinks the fibroids by cutting off their blood flow
6. **Magnetic resonance guided focused:** In this technique sound waves are passed into the uterus. This procedure shrinks the fibroids.
7. **Radiofrequency ablation of fibroids:** This is performed under laparoscopic and ultrasound guidance. Heat is applied into the fibroids which make the fibroids smaller and soft.
8. **Myomectomy:** It is surgical methods where fibroids are removed from the uterus. But the uterus stays intact to preserve the women's fertility. There are three methods of myomectomy:
 - (a) Traditional open myomectomy: An abdominal incision is done where there will be risk of bleeding and scar tissue formation and long recovery
 - (b) Laparoscopic myomectomy: A small abdominal incision is done and uses a laparoscope. There will be less bleeding and a fast recovery but it is not suited for all patients.
 - (c) Hysteroscopy myomectomy: A camera is inserted through the vagina to remove the visible portion of the fibroids [20].
- Treatment with the combination of RELUGOLIX (an oral gonadotropin releasing hormone receptor antagonist) **ESTRADIOL, NORETHINDRONE ACETATE** is more effective in women with uterine fibroids and heavy bleeding while avoiding hypo estrogenic effects [21].

3. DISCUSSION

Fibroids can be classified based on the location on the layers of the uterus and they can be single or multiple.

- **Myometrial** in the uterine wall
- **Sub mucosal** under the uterine lining
- **Sub serosal** under the outside uterine lining
- **Pedunculated** on a long stalk inside or outside of the uterus.

4. CONCLUSION

Nearly 80% women of reproductive age were diagnosed with uterine fibroids. They can be seen in women who are near to menopause and regress after menopause. They form more commonly from age 30 to the age where menopause begins. Inspite of their benign nature, fibroids undergo rapid and significant growth.

REFERENCES

- [1] Uterine fibroids- symptoms and causes- Mayo Clinic <https://www.mayoclinic.org/diseases>
- [2] Uterine fibroids- ACOG <https://www.acog.org/faqs/uterinefibroids>
- [3] Williams RWA, Conceptualization, Uterine fibroids- What's new? 2017 December 7 doi:10.12688/f1000research.12172.1
- [4] Kallen A, Brazier Y, Fibroids: Everything you need to know 2020 September 29.
- [5] Navarro A, Yang Q, Bariani MV, Understanding the impact of uterine fibroids on human endometrium function, 2021 May 25 <https://doi.org/10.3389/fcell.2021.633180>
- [6] Giuseppe DJ, Stortoni P, et al; Uterine fibroids: pathogenesis and interaction with endometrium and endomyometrial junction, 2013 September 12 <https://doi.org/10.1155/2013/173184>
- [7] Khan A, Shehmar M, Gupta J, Uterine fibroids: Current perspectives <https://doi.org/10.2147/IJWH.S51083>
- [8] Smith Y, What are uterine fibroids? <https://www.news-medical.net/uterinefibroids>.
- [9] Zimmermann A, Bernuit D, Prevalence, symptoms and management of uterine fibroids: an international internet-based survey of 21,746 women, 2012 March 26 doi:10.1186/1472/6874-12-6
- [10] 10.Uterinefibroids-Clevelandclinic <https://my.clevelandclinic.org/health>
- [11] 11. Oindi J.M.F, Mwaniki AM, Uterine fibroids: Clinical presentation, 2019 September 20 doi:10.5772/intechopen.88473
- [12] Wise AL, Laughlin KS, Tommaso, Epidemiology of uterine fibroids- from menarche to menopause 2016 March;59(1):pgno.2-24 doi:10.1097/GRF.0000000000000164
- [13] Ross RK, Pike MC, Vessey MP, Risk factors for uterine fibroids: reduced risk associated with oral contraceptives, PMID:3730804 doi:10.1136/bmj.293.6543.359
- [14] Millien C, Manzi A, Gilbert H, et al; Assessing burden, risk factors and perceived impact of uterine fibroids on women's lives in rural Haiti: implications for advancing a health equity agenda, a mixed methods study, 2021 January 01
- [15] <https://doi.org/10.1186/S12939-020-01327-9>
- [16] Uterine fibroids: A common reason for irregular bleeding and pain, 2017 October 29 <https://helloclue.com/articles/cycle-a-z/uterine-fibroids-common-reason-for-irregular-bleeding-pain>
- [17] Fibroids: types, causes, symptoms, risk factors, treatment of myomas by doctor .2022 March 06 <https://www.hindustantimes.com/fibroidsuterine> Stoppler MC, Davis CP, Uterine fibroids 2022 July 21
- [18] Cruz MSDDL, Buchanan ME, Uterine fibroids: Diagnosis and treatment- AAFP
- [19] Mayer PD, Shipilov V, Ultrasonography and magnetic resonance imaging of uterine fibroids, 1995 December;22(4):pgno.667-725. [https://doi.org/10.1016/S0889-8545\(21\)0060-4](https://doi.org/10.1016/S0889-8545(21)0060-4)
- [20] Fibroids <https://www.hopkinsmedicine.org/health/conditions-and-diseases/uterine-fibroids>
- [21] 21.Hendy Al A, Andrea S, et al. Treatment of uterine fibroid symptoms with Relugolix combination therapy- The New England Journal Of Medicine, 2021 February 18, 384:630-42 doi:10.1056/NEJMoa2008283