Non-Invasive Therapy for Uterine Fibroids and Endometriosis

Women's Wellness Center | Columbia Hormone Health

What Are Uterine Fibroids?

Uterine fibroids (leiomyomas) are non-cancerous smooth-muscle tumors of the uterus. They may occur as single or multiple growths and are found in up to 40% of women over age 40. Because fibroids are estrogen-dependent, they often enlarge with estrogen exposure. Fibroids can cause abnormal uterine bleeding or symptoms related to pressure on the bladder or rectum. Treatment is often surgical, including hysterectomy, though non-invasive options exist.

What Is Endometriosis?

Endometriosis occurs when tissue similar to the uterine lining grows outside of the uterus—on ovaries, bowel, bladder, or peritoneal surfaces. These implants are also estrogen-dependent, and often cause pelvic pain that worsens around menses. Endometriosis affects 10–15% of women and is present in up to 70% of those with chronic pelvic pain. Surgical treatment may include removal of the uterus and ovaries, but implants can remain and continue to cause symptoms.

Estrogen Production in the Body

In the body, estrogen is synthesized from testosterone through a process called aromatization, requiring the enzyme **aromatase**. Although estrogen produced by the ovary is familiar to most people, estrogen is also produced locally in other tissues. This locally produced estrogen acts on the spot, within cells of origin, so does not appear on a blood measurement of estrogen.

Why Fibroids and Endometriosis Grow

Normal uterine muscle and normal endometrial cells do not contain aromatase, and therefore do not produce estrogen. However, fibroid and endometriosis tissue contain aromatase in extremely high levels, producing large amounts of local estrogen that fuel continued growth of the fibroid or endometriosis. These pathologic tissues create their own estrogen supply—essentially generating their own growth stimulus.

Aromatase Inhibitors (AIs): Targeting Estrogen Production in Fibroids and Endometriosis

Aromatase inhibitor medications (AIs), such as one called **anastrozole**, block aromatase activity and therefore reduce estrogen production within fibroids and endometriosis. Clinical studies show that AIs can:

- Shrink fibroid size
- Reduce abnormal bleeding from fibroids
- Cause regression of endometriosis implants
- Relieve chronic pelvic pain originating from endometriosis

However, AIs also block estrogen production throughout the body. In postmenopausal women—or women without ovaries—this results in profound estrogen depletion, which could cause significant side effects.

Subcutaneous Anastrozole: A Well-Tolerated Option

A newer delivery method uses a subcutaneous pellet containing anastrozole. This delivery system allows slow release of the medication consistently for 3-4 months. Because the medication avoids liver first-pass metabolism, the effective dose is much lower (about 1/20th of the daily oral dose), and side effects are not an issue. And, when *add-back hormone therapy* is administered, it prevents symptoms of estrogen depletion that could otherwise arise from AI therapy.

Add-Back Hormone Therapy with Estrogen and Testosterone

When estrogen production is suppressed with AIs, **add-back therapy** using estrogen and/or testosterone can preserve overall health and minimize symptoms of estrogen deficiency. Why would we add back estrogen, when that's the hormone we're trying to block with the AI therapy?

The estrogen circulating in your vascular system is not the main source of estrogen that feeds fibroid tumors or endometriosis. Rather, it is the local estrogen produced through excessive aromatase activity within the fibroid or endometriosis tissue. Blocking aromatase in those tissues is the key.

If you still have a normal amount of estrogen circulating, it is not likely to fuel growth of the fibroids or endometriosis to the extent that the pathologically produced estrogen would. Normal circulating estrogen, whether naturally produced by ovaries or provided as hormone therapy, is safe, and needed by all tissues of the body.

Why Testosterone Matters

Testosterone is an important hormone we also administer when using AI therapy, because it provides benefits that estrogen alone cannot provide. Testosterone is an essential female hormone, supporting:

- Bone density and muscle mass
- Reduction of musculoskeletal and arthritis pain
- Heart and brain protection
- Mood, energy, libido, sexual health. General sense of well-being

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The T + A Pellet

Anastrozole combined with testosterone in a single pellet (T+A), implant every 3-4 months, provides:

- Local estrogen suppression, with all the benefits of testosterone for systemic support
- Relief of fibroid growth and endometriosis pain with no side effects
- Clinical studies and extensive clinical experience support the safety and effectiveness of this therapy.

SUMMARY OF KEY POINTS:

- **Estrogen is produced in the body by aromatization of testosterone, requiring the aromatase enzyme.**
- **Fibroid and endometriosis tissue contain abnormally large amounts of aromatase, thus producing excessive estrogen within these tissues.**
- **Aromatase Inhibitor (AI) therapy blocks estrogen production in fibroid and endometriosis tissue, and all tissues, except the ovaries.**
- **Add-back hormone therapy with testosterone and/or estrogen prevents adverse consequences of estrogen depletion.**
- **Anastrozole is an AI shown in clinical studies to reduce the size of fibroid tumors, and reduce uterine bleeding associated with fibroids.**
- **Anastrozole has been shown in clinical studies to cause regression of endometriosis, and to reduce chronic pelvic pain of endometriosis.**
- **Anastrozole as subcutaneous implant, rather than oral pill, avoids side effects of the higher oral dose.**

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