

2 menorrhagia treatments: Which is better?

Hurskainen R, Teperi J, Rissanen P, et al. *Clinical outcomes and costs with the levonorgestrel-releasing intrauterine system or hysterectomy for treatment of menorrhagia. Randomized trial 5-year follow-up.* JAMA. 2004;291:1456-1463.

OBJECTIVE

To compare outcomes, quality of life, and expenses for the levonorgestrel-releasing intrauterine system (LNG-IUS) versus hysterectomy in women with menorrhagia.

RESULTS

After 5 years, the LNG-IUS and hysterectomy groups did not differ substantially in health-related quality of life, psychosocial well-being, or satisfaction with treatment. The LNG-IUS group had significantly lower costs (\$2,817 versus \$4,660 per woman).

EXPERT COMMENTARY

This well-executed study compared 119 women who received LNG-IUS with 117 participants who underwent hysterectomy. Follow-up visits took place at 6 months, 12 months, and 5 years after randomization. Enrollment details and 1-year follow-up data were published in 2001.¹ At the time of that report, 24 women with the LNG-IUS had undergone hysterectomy (20%).

The current study presents 5-year follow-up data and reports that hysterectomy was ultimately performed in 50 women (42%) originally treated with the LNG-IUS. For comparison, note that 25% of women who undergo myomectomy and approximately 50% of those who undergo endometrial ablation present for hysterectomy within 5 years.

Unanswered questions

Unfortunately, Hurskainen et al provide no information on why the 236 women were enrolled in this protocol, except that they all had menorrhagia. Uterine fibroids and endometrial polyps, for example, cause anatomical abnormal bleeding, and thyroid dysfunction or acquired bleeding diathesis can cause functional bleeding. It would be important to learn that these conditions did not exist in the women prior to the study.

Assessing costs in practical terms

The authors translated medical and hysterectomy expenses into US dollars. However, the cost of hysterectomy in the United States is substantially higher than the figures quoted in the article. Thus, the cost-efficiency of medical therapy is even greater than this study suggests.

In assessing costs cited in the literature, each physician must decide how his or her patients compare to the study population. I suspect that only a few US populations (well-educated, non-obese) would match the women in this trial. Nevertheless, the authors offer an objective report that medical therapy is less expensive.

BOTTOM LINE

This study presents 3 novel facts: (1) Women who accept LNG-IUS must understand that there is a 42% chance they will need hysterectomy within 5 years; (2) the cost reduction with medical therapy in

**LNG-IUS users
have a 42% chance
of needing
hysterectomy
in 5 years.**

women with menorrhagia is a founded premise; and (3) health-related quality of life is improved during treatment with either medical therapy and hysterectomy.

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Fetal loss linked to excess thyroid hormone

Anselmo J, Cao D, Karrison T, Weiss RE, Refetoff S. Fetal loss associated with excess thyroid hormone exposure. JAMA. 2004;292:691-695.

OBJECTIVE

To study the fetal effects of excess maternal thyroid hormone (TH).

RESULTS

Of the 36 couples in this study, 9 included women with TH resistance (RTH) who were euthyroid despite high TH levels, 9 included men with this condition, and 18 were unaffected. Mean miscarriage rates were 22.9%, 2.0%, and 4.4%, respectively. Infants without RTH who were born to mothers with the condition were significantly smaller than infants who shared their mother's TH status.

EXPERT COMMENTARY

Animal studies suggest that both hyper- and hypothyroidism are associated with increased numbers of malformations and poor reproductive outcomes. In humans, hyperthyroidism is usually associated with thyroid autoantibodies, so it is unclear whether the increased rate of miscarriages seen with this condition is related to the elevated circulating thyroid hormone, to autoantibodies, or to both. To explore this, Anselmo et al took advantage of a "natural experiment" in a large extended family. This family harbored a single gene mutation, inherited autosomally, that made the TH receptor resistant to thyroid hormone.

Women with this mutation have, on average, twice the circulating TH level and

REFERENCE

1. Hurskainen R, Teperi J, Rissanen P, et al. Quality of life and cost-effectiveness of levonorgestrel-releasing intrauterine system versus hysterectomy for treatment of menorrhagia: a randomized trial. *Lancet*. 2001;357:273-277.

normal thyroid-stimulating hormone (TSH). They are clinically euthyroid, without autoantibodies, but elevated TH levels pass to the fetus, which may or may not be genetically affected by the same condition.

Infants with mutation are protected

Anselmo et al found normal birth weight among babies affected by the same mutation as their mother. Presumably, these infants are euthyroid and grow normally despite elevated circulating TH. In contrast, infants who lack the mutation are significantly smaller due to the maternal environment of elevated circulating TH.

Unfortunately, although Anselmo and colleagues performed a thorough and thoughtful analysis, they did not indicate how prevalent this condition is in the general population.

BOTTOM LINE

This study supports other evidence that elevated TH is associated with early fetal loss. This information can be generalized to patients with thyroid disease. Women on thyroid replacement should be monitored to ensure that their TH is in the normal range, and physicians should make every attempt to normalize TH in women with thyrotoxicosis. ■

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Normalize TH in pregnant women with thyrotoxicosis.