A levonorgestrel-releasing intrauterine system was more cost-effective than was hysterectomy for menorrhagia


**Question**
In women with menorrhagia, is the levonorgestrel-releasing intrauterine system (IUS) more effective than hysterectomy for quality of life, psychological well-being, and cost outcomes?

**Design**
Randomized (allocation concealed*), unblinded,* controlled trial with 12-month follow-up.

**Setting**
5 university hospitals in Finland.

**Patients**
236 women who were 35 to 49 years of age (mean age 43 y), had menorrhagia, and were eligible for hysterectomy. Exclusion criteria were submucous fibroids, endometrial polyps, ovarian tumors or cysts (diameter > 5 cm), cervical disease, urinary and bowel symptoms or pain caused by large fibroids, lack of indication for hysterectomy, history of cancer, menopause, severe depression, metrorrhagia, previous treatment failure with levonorgestrel-releasing IUS, severe acne, or uterine malformation. 228 women with levonorgestrel-releasing IUS, severe menorrhagia, metrorrhagia, previous treatment failure history of cancer, menopause, severe depressive symptoms or pain caused by large fibroids, lack of indication for hysterectomy, history of cancer, menopause, severe depression, metrorrhagia, previous treatment failure with levonorgestrel-releasing IUS, severe acne, or uterine malformation. 228 women (97%) completed the 12-month follow-up.

**Intervention**
Women were allocated to the levonorgestrel-releasing IUS (n = 119), which releases 20 µg of levonorgestrel over 24 hours for ≥ 5 years from a polydimethylsiloxane reservoir, or to hysterectomy (n = 117), done abdominally, vaginally, or laparoscopically. The mean waiting time for hysterectomy was 6.7 months.

**Main Cost and Outcome Measures**
The primary measure of effectiveness was response on the EuroQol (EQ-5D) questionnaire at 12 months. Anxiety, depression, and sexuality-related factors were also assessed. Costs measured were hospital services, medication, and sick leave and included productivity losses.

**Main Results**
Analysis was by intention to treat. 20% of patients in the IUS group had a hysterectomy. At 12 months, the EQ-5D scores improved from baseline (P < 0.001), and the groups did not differ. In all other measures of psychosocial well-being, general health, and depression, both groups improved from baseline; groups did not differ except for the pain score on the RAND 36-item health survey that favored hysterectomy (P = 0.01). IUS incurred lower costs than did hysterectomy (Table). When a lower estimate of productivity loss was used, a lower cost was still seen in the IUS group (Table).

**Conclusion**
In women with menorrhagia, the levonorgestrel-releasing intrauterine system was as effective as hysterectomy for outcomes of quality of life and psychological well-being and was more cost-effective at 1 year.

**Sources of funding:** Academy of Finland; STAKES; University Hospitals, Finland. Levonorgestrel-releasing IUSs provided by Leiras.

**For correspondence:** Dr. R. Hurskainen, STAKES, Box 220, FIN-00531 Helsinki, Finland. FAX 358 9 39672485.

*See Glossary.

**Levonorgestrel-releasing intrauterine system (IUS) vs hysterectomy for menorrhagia at 12 months†**

<table>
<thead>
<tr>
<th>Outcomes (U.S.)</th>
<th>Costs (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IUS</strong></td>
<td><strong>Hysterectomy</strong></td>
</tr>
<tr>
<td>Total cost/woman</td>
<td>1530 (1203 to 1853)</td>
</tr>
<tr>
<td>Lower estimate of cost of productivity loss/woman</td>
<td>1227 (1012 to 1437)</td>
</tr>
</tbody>
</table>

†Costs expressed as U.S. equivalents for Finnish marks ($1 U.S. = 5.89 Finnish marks).

**Commentary**
The use (presumed overuse) of hysterectomy for treatment of idiopathic menorrhagia has been a cause of concern because of potential adverse clinical and economic consequences. Surgical alternatives to hysterectomy (e.g., endometrial resection and ablation) have been available for some time, but their use has been limited. Among women awaiting hysterectomy, the levonorgestrel-releasing IUS has previously been shown to improve menstrual symptoms and quality of life (1).

The overall aim of management of a chronic, benign condition like menorrhagia is to reduce the adverse effect of the condition on quality of life. This study used only generic quality-of-life measures to assess outcomes. The additional use of disease-specific measures that focus on aspects of health unique to menorrhagia could have strengthened the conclusions even further. Nevertheless, it can be safely inferred that the levonorgestrel-releasing IUS is a cost-effective treatment for generic health outcomes in menorrhagia in the short term.

Khalid S. Khan, MBBS, MSc
Birmingham Women’s Hospital
Birmingham, England, UK

**Reference**