Use of GnRH agonist before hysterectomy: a cost simulation

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Use of GnRH agonist before hysterectomy in order to convert abdominal hysterectomies to vaginal procedures for women with fibroid uteri equivalent to 14-18 week gestation.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
Women aged 35-46 years undergoing hysterectomy for fibroid uteri.

Setting
Hospital. The economic study was conducted in North Carolina, USA.

Dates to which data relate
The bulk of the effectiveness data related to a randomised trial published in 1991. 1980-1987 and 1992 data were used for cost projections.

Source of effectiveness data
Review of previously completed studies.

Modelling
The results of the randomised trial conducted by Stovall et al. were used to obtain projections of the impact of the use of GnRH agonist at a national level.

Outcomes assessed in the review
The outcomes assessed were the conversion rates from abdominal to vaginal hysterectomy using GnRH agonist as preoperative therapy.

Study designs and other criteria for inclusion in the review
Not stated.
Sources searched to identify primary studies
Not stated.

Criteria used to ensure the validity of primary studies
Not stated.

Methods used to judge relevance and validity, and for extracting data
Not stated.

Number of primary studies included
The bulk of data used in the analysis came from a randomised trial. Also, state-wide (North Carolina) inpatient experience was analysed to ascertain the proportion of all hysterectomies occurring in the trial's age cohort and for uterine leiomyomas.

Methods of combining primary studies
Not applicable.

Investigation of differences between primary studies
Not applicable.

Results of the review
Overall, the GnRH agonist preoperative therapy resulted in 50.6% of treated cases converting to vaginal hysterectomy, with a reduction in post-operative length of stay of 68.6% and convalescent days of 84.5%.

Measure of benefits used in the economic analysis
Overall, the GnRH agonist preoperative therapy resulted in 50.6% of treated cases converting to vaginal hysterectomy.

Direct costs
Direct inpatient medical care charges were considered. 1980-1987 and 1992 data were used for cost projections. No discounting seems to have been done.

Currency
US dollars ($).

Sensitivity analysis
The national simulated net savings estimates were examined by varying the following assumptions over suitable ranges (base-case assumptions in parentheses): (1) the abdominal-to-vaginal conversion rate achieved (80%), (2) the monthly price of GnRH medication ($191), (3) the proportion of symptomatic leiomyoma cases in women aged 35-46 years among all hysterectomies for all age groups (12.7%) and (4) the ratio of the vaginal and abdominal hospital episode charge (84.7%).

Estimated benefits used in the economic analysis
Overall, the GnRH agonist preoperative therapy resulted in 50.6% of treated cases converting to vaginal hysterectomy.
Cost results
The projected national savings, if 1987 utilisation data were used, were $4.6 million, nearly 1.4% of the inpatient charges. The 1992 value of these savings was $6.7 million.

Synthesis of costs and benefits
Incremental costs were negative, while incremental benefits were shown to be positive.

Authors' conclusions
The use of preoperative GnRH agonist therapy before hysterectomy, for patients with a uterine size equivalent to a 14-18 week gestation, represented a significant cost-saving alternative, increasing the use of vaginal hysterectomy and resulting in potential savings in direct inpatient medical charges.

CRD Commentary
This was a well executed modelling exercise. Although the method used to pool data from different sources was not clear, it used information soundly and credibly. A good sensitivity analysis was performed to test the robustness of results to variations in key parameters. Also, the authors attempted to generalise the results to a national level. Although the 1987 value of the total savings was corrected to allow for price changes, no discounting seems to have been done to account for time preference. Further research is necessary on patients' preferences and quality of life issues related to this procedure.

Source of funding
None stated.

Bibliographic details

PubMedID
7862380

DOI
10.1016/0029-7844(94)00402-Y

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Cost Savings; Decision Support Techniques; Female; Hospital Charges /statistics & numerical data /trends; Humans; Hysterectomy /economics; Hysterectomy, Vaginal /economics; Leiomyoma /drug therapy /surgery; Leuprolide /therapeutic use; Middle Aged; North Carolina; Uterine Neoplasms /drug therapy /surgery

AccessionNumber
21995000355

Date bibliographic record published
31/10/1997

Date abstract record published
31/10/1997