Postoperative urinary incontinence after total abdominal hysterectomy or supracervical hysterectomy: a metaanalysis

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CRD summary
This well-conducted review assessed the incidence of urinary incontinence following total abdominal hysterectomy or supracervical hysterectomy. The authors concluded that there was no evidence of a differential increase in either stress or urge incontinence following the procedures. These conclusions accurately reflect the results of the review and are likely to be reliable.

Authors' objectives
To determine if the incidence of urinary incontinence following hysterectomy is determined by whether total abdominal hysterectomy (TAH) or supracervical hysterectomy (SCH) is performed.

Searching
The following databases were searched, without language restriction, from 1966 to February 2007: MEDLINE, EMBASE, CINAHL, Biological Abstracts, the Cochrane Library, the National Institutes of Health Clinical Trials Registry and Current Controlled Trials. Abstracts of major American and international urogynecology meetings were hand searched from 2003 to 2005. Bibliographies were scanned and experts were also contacted. Search terms were reported.

Study selection
Randomised controlled trials (RCTs) which compared TAH with SCH and reported the development of urinary incontinence, defined as stress and/or urge incontinence, were eligible for inclusion in the review. Trials were required to report at least one year's follow-up. Secondary review outcomes were urinary frequency and incomplete emptying. Studies of radical hysterectomy or prolapse surgery were excluded from the review. Included studies used a range of measures for primary and secondary outcomes.

Two reviewers independently assessed studies for inclusion in the review.

Assessment of study quality
Two reviewers independently assessed the studies for validity using the Jadad scale which assigns up to five points for the criteria of randomisation, blinding and treatment of withdrawals and drop-outs.

Data extraction
Two reviewers independently extracted the data using standardised forms. Relative risks (RRs) with 95% confidence intervals (CIs) were calculated for each outcome. Where both 1- and 2-year follow-up data were reported, the 1-year data was used for the synthesis.

Methods of synthesis
Studies were combined in a Mantel-Haenszel fixed effect meta-analysis and pooled RRs with 95% CIs were calculated. Statistical heterogeneity was assessed using $\chi^2$ tests with $P < 0.05$ considered to indicate statistically significant heterogeneity. Meta-regression analyses to explore the influence of potential confounders were planned but not conducted. A sensitivity analysis without the most influential study was conducted. Publication bias was assessed using Begg's funnel plot.

Results of the review
Three RCTs (n = 733) were included in the review. The median Jadad score was three (range 3-4).

There was no statistically significantly increased incidence of stress incontinence with SCH than with TAH (RR 1.30, 95% CI: 0.94, 1.78). Nor was there any statistically significantly increased incidence of urge incontinence (RR 1.37,
95% CI: 0.77, 2.46). Neither of the secondary outcomes of frequency or incomplete emptying showed any difference between the groups (RR 1.27, 95% CI: 0.84, 1.85; and RR 0.90, 95% CI: 0.59, 1.38, respectively).

The funnel plot showed no evidence of publication bias.

Authors' conclusions
There is no statistical evidence of a differential risk for the development of stress or urge incontinence after TAH or SCH.

CRD commentary
The review question was clear and was supported by well-defined inclusion criteria. The authors searched several relevant databases and made attempts to include unpublished studies. This reduced the risk of relevant studies being excluded from the review and of publication bias, for which an assessment found no evidence. The authors used rigorous methodology at all stages of the review process. An appropriate assessment of study validity was conducted, although there was little scope for it to inform the synthesis. The decision to employ meta-analysis appears appropriate as, although a number of different outcome measures were pooled, there was no evidence of statistical heterogeneity. This was a well-conducted review and the authors' conclusions are likely to be reliable.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.
Research: The authors stated that longer-term follow-up may be required after hysterectomy in order to accurately determine the incidence of urinary incontinence, which may develop over a prolonged period following pelvic trauma.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.