Vaginal vault smears after hysterectomy for reasons other than malignancy: a systematic review of the literature


CRD summary
The authors set out to evaluate the effectiveness and quality of vaginal vault smears; however, owing to inconsistency in study design and methodological quality, the value of vault smears could not be established. This was a well-conducted review and the results are likely to be reliable.

Authors' objectives
To evaluate the effectiveness and quality of vaginal vault smears for the detection of cancer after hysterectomy.

Searching
MEDLINE, EMBASE, CINAHL, Cancerlit, DARE, TRIP, the Cochrane Library and Web of Science were searched from inception (date searched up to was not reported); the search terms were reported. Authors of relevant papers were contacted to identify further published or unpublished studies, and bibliographies were checked.

Study selection
Study designs of evaluations included in the review
There were no inclusion criteria relating to the study design. Case reports and expert opinion were excluded.

Specific interventions included in the review
Studies of the vault smear test were eligible for inclusion.

Reference standard test against which the new test was compared
The review did not include any diagnostic accuracy studies that compared the performance of the index test with a reference standard. The included studies were primarily retrospective studies of screening programmes, and did not include a reference standard.

Participants included in the review
Studies of women who had undergone hysterectomy for reasons other than malignancy (benign or pre-cancerous conditions) were eligible for inclusion. Studies including a cohort of women with abnormal smears, where the number having hysterectomy was not stated, were excluded. Most of the women included in the studies had cancer in situ/cervical intra-epithelial neoplasia (CIN) III or benign histology.

Outcomes assessed in the review
The studies had to provide sufficient data for the value of vault smears to be estimated. The outcomes of interest were the numbers of abnormal smears, biopsies and cancers diagnosed.

How were decisions on the relevance of primary studies made?
Two authors independently selected studies for inclusion in the review; any disagreements were resolved by discussion with a third reviewer.

Assessment of study quality
Two reviewers independently assessed study quality using a modified version of the NHS Critical Appraisal Skills Programme (CASP) tool for assessing diagnostic tests; any disagreements were resolved by consensus. Studies could score up to 10 points; studies that scored more than 6 were considered good quality.
Data extraction
Two reviewers independently extracted the data; any disagreements were resolved by consensus. The number of women who had a hysterectomy, followed up with a vault smear, and the numbers of abnormal smears, biopsies and cancers diagnosed, were extracted from each study.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative, grouped by participant diagnosis.

How were differences between studies investigated?
Study details were tabulated and differences discussed in the text.

Results of the review
Nineteen studies (n=119,852, range: 34 to 90,000; 13,587 had vault smears) met the inclusion criteria; one was a controlled study, one was a prospective diagnostic cohort, and the remainder were retrospective cohort studies. Where reported, the mean duration of follow-up ranged from 2 months to more than 30 years.

The mean quality score was 5.5 (range: 3.5 to 9); 6 studies scored over 6.

Hysterectomy for benign histology (5 studies): of 6,543 women, 1.8% had an abnormal smear, 0.12% had an abnormal biopsy; no cancers were identified.

Hysterectomy for CIN I or II (3 studies): of 64 women, 3.1% had an abnormal smear; of 76 women 1.3% had an abnormal biopsy; no cancers were identified.

Hysterectomy for cancer in situ/CIN III (15 studies): of 2,028 women, 14.1% had an abnormal smear; of 5,037 women, 1.7% had an abnormal biopsy; one vaginal cancer was identified.

Abnormal smear and biopsy were positively associated with the histology at hysterectomy.

Authors' conclusions
The inconsistency in study design and limited methodological quality meant that the value of vault smears could not be established.

CRD commentary
The research question was clear in terms of the participants and intervention; criteria relating to the outcomes were vague, and there were no inclusion criteria relating to the study design. The authors undertook a comprehensive search, although it was unclear whether language restrictions were applied. Each stage of the review was conducted independently, thus reducing the potential for error and bias. Combining the studies in a narrative seems appropriate given the clinical heterogeneity of the included studies. This was a well-conducted review and the results are likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that, based on the currently available evidence, the current UK guidelines appear reasonable.

Research: The authors suggested research to determine the optimum duration and frequency of vault smears, and the anxiety related to being tested. They suggested a large, prospective audit of a cohort of women.
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