LIQUID COMPARED WITH CONVENTIONAL CERVICAL CYTOLOGY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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OBJECTIVE

To compare test performance characteristics of conventional Pap smears and liquid-based cervical cytology samples.

DATA SOURCES

Eligible studies, published between 1991 and 2007 were retrieved through Pubmed/EmBase searching, completed by consultation of other sources.

METHODS OF STUDY SELECTION

Studies were selected if a conventional and a liquid-based sample were prepared from the same woman or when one or the other type of sample was taken from separate but similar cohorts. The current systematic review is restricted to studies where all subjects where submitted to gold standard verification, based on colposcopy and histology of colposcopy-targeted biopsies allowing computation of absolute and relative test validity for cervical intraepithelial neoplasia grade-II or worse. Randomized trials were selected as well, if all test positive cases were verified with the same gold standard, allowing computation of the relative sensitivity. Impact of study characteristics on accuracy was assessed by sub-group meta-analyses, meta-regression and summary ROC (receiver operating characteristic) curve regression.

TABULATION, INTEGRATION, AND RESULTS

The relative sensitivity, pooled from 8 studies, with complete gold standard verification, and from one randomized clinical trial, did not differ significantly from unity. Also the specificity, considering high-grade and low-grade squamous intraepithelial lesions as cut-off, was similar in conventional and liquid cytology. However, a lower pooled specificity was found for liquid-based cytology when presence of atypical squamous cells of undetermined significance was the cut-off (ratio=0.91; 95% CI: 0.84-0.98). Differences in study characteristics did not explain inter-study heterogeneity.

CONCLUSIONS

There is no evidence available indicating that liquid-based cytology improves detection of cervical intraepithelial neoplasia grade-II or worse.

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