

Alternative to pap test does not appear to be better for detecting cervical cancer

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A Dutch study that included nearly 90,000 women finds that liquid-based cytology, a commonly used alternative to conventional Pap tests, is not superior to Pap tests for the detection of cervical cancer precursors or cancer, according to a study in the October 28 issue of *JAMA*.

Due to false-negative and false-positive test results, the papanicolaou (Pap) test is considered suboptimal. For the liquid-based cytology (use of cells), the [cervical cells](#) are collected with a traditional sampling device and rinsed into a vial with preservation solution rather than being smeared on a slide, according to background information in the article. Despite numerous studies, some uncertainty remains about its diagnostic accuracy.

Albertus G. Siebers, M.Sc., of Radboud University Nijmegen Medical Centre, Nijmegen, the Netherlands, and colleagues compared the screening performance of Pap tests and liquid-based cytology in terms of test positivity rates, histological detection rates and positive predictive values (PPVs). The randomized controlled trial involved 89,784 women ages 30 to 60 years who participated in a Dutch cervical screening program at 246 family practices. One hundred twenty-two practices were assigned to use liquid-based cytology and screened 49,222 patients and 124 practices were assigned to use the conventional PAP test and screened 40,562 patients. Patients were screened for cervical intraepithelial neoplasia (CIN) and were followed up for 18 months, through January 2008.

The researchers found that the adjusted detection rate ratios for CIN grade 1+ was 1.01; for CIN grade 2+, 1.00; for CIN grade 3+, 1.05; and for carcinoma, 1.69. "The adjusted positive predictive value ratios, considered at several cytological cutoffs and for various outcomes of CIN did not differ significantly from unity."

"Because of randomization, it can plausibly be assumed that the prevalence of CIN was equal in both study groups. Therefore, the lack of difference in detection rates and PPV in this trial demonstrates that liquid-based cytology is neither more sensitive nor more specific in detecting cervical cancer precursors than the conventional Pap smear."

"As shown in a previous publication, no differences were found in the cytological test positivity rates between methods. Nevertheless, these cytological findings contribute insufficient evidence to claim equal diagnostic accuracy. Both the intention-to-treat and per protocol analyses demonstrated that liquid-based cytology was not superior to Pap test regarding detection rates of histologically confirmed outcomes. The same was found for the PPVs. Altogether, these findings provide strong evidence that the performance of liquid-based cytology is not superior to that of the conventional Pap test when applied within a well-organized and quality-controlled cervical screening program," the authors write.

In an accompanying editorial, Mark Schiffman M.D., M.P.H., and Diane Solomon, M.D., of the National Cancer Institute, Bethesda, Md., comment on the findings of this study.

"It is a challenging time to be a clinician or health planner dedicated to cervical cancer prevention. Even though an increasingly powerful set of prevention tools is available, no combination of vaccination, cytology, HPV testing, colposcopy, and novel methods will be suitable for all settings. Even in the most wealthy regions, using vaccination, cytology, and HPV testing without careful planning would invite waste and, more

importantly, overtreatment. For those designing rational [cervical cancer](#) prevention programs, Siebers et al have convincingly simplified one aspect of a complex health policy puzzle. Physicians and other health professionals can choose either liquid-based cytology or conventional Pap smear as they discuss how cytology fits into the larger picture."

More information: *JAMA*. 2009;302[16]:1757-1764.

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