Study: HPV test beats Pap in detecting cervical cancer

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A new study led by McGill University researchers shows that the human papillomavirus (HPV) screening test is far more accurate than the traditional Pap test in detecting cervical cancer. The first round of the Canadian Cervical Cancer Screening Trial (CCCaST), led by Dr. Eduardo Franco, Director of the Division of Cancer Epidemiology at McGill's Faculty of Medicine, concluded that the HPV test's ability to accurately detect pre-cancerous lesions without generating false negatives was 94.6%, as opposed to 55.4% for the Pap test.

The results of the study, first-authored by Dr. Franco's former McGill PhD student Dr. Marie-Hélène Mayrand of the Centre hospitalier de l'Université de Montréal (CHUM), with colleagues from McGill, Université de Montréal, the Newfoundland and Labrador Public Health Laboratory and McMaster University, are published in the October 18 issue of The New England Journal of Medicine.

CCCaST is the first randomized controlled trial in North America of HPV testing as a stand-alone screening test for cervical cancer. The first round followed 10,154 women aged 30 to 69 in Montreal, Quebec and St. John's, Newfoundland who were enrolled in the study from 2002 to 2005. The study was funded by a grant from the Canadian Institutes of Health Research (CIHR).

The study concluded that while the HPV test's sensitivity was nearly 40% greater than the Pap test's, the Pap did, however, slightly edge out HPV for accuracy on the specificity scale -- its ability to accurately

detect pre-cancerous lesions without generating false positives -- at 96.8% versus 94.1%.

"We already knew before conducting this study that the sensitivity of Pap left a lot to be desired," said Dr. Franco, James McGill Professor in the Departments of Oncology and Epidemiology and Biostatistics, and Director of the Division of Cancer Epidemiology at McGill University's Faculty of Medicine. "However, 55.4% accuracy is only slightly above chance. Flipping a coin gives you 50%."

The Papanicolaou (or Pap) test was invented by Dr. Georgios N. Papanicolaou in the 1940s and requires technicians to look under a microscope for abnormalities in cell samples collected from the patient's cervix. It has been the standard screening procedure for cervical cancer for almost 50 years. The HPV test also requires the collection of cervical samples, but the analysis process is automated and detects the DNA of high-risk human papillomavirus (HPV) strains known to cause cervical cancer.

A screening test's sensitivity is usually considered a more premium parameter than specificity, according to Dr. Franco. "A false positive may be very disturbing and psychologically distressing for the patient, but in the end, she's free of disease. False negatives are very serious business, however. The patient will be assured that she's negative, all the while a pre-cancer has a chance to become a cancer or her existing cancer has a chance to grow."

Though the results of the CCCaST study might have a bearing on the ongoing debate about vaccinating young women against HPV, Dr. Franco stressed that the two issues should be considered separately. "Vaccination is primary prevention; this study is about secondary prevention, which refers to screening. Even women who take the vaccine will still need to be screened, because the vaccines that are available now

only prevent about 70% of all cervical cancers, and they're primarily for young women.

The HPV test may be ideal for vaccinated women once they reach screening age, because it gives us an opportunity to monitor the protection that the vaccine is supposed to give them."

Dr. Franco added that, while the HPV screening test is now more expensive than a Pap test, that will likely change over time. "Moreover, because of its higher sensitivity and only slightly lower specificity, patients would only require an HPV test once every three years instead of annually, as is necessary with the Pap test."

Source: McGill University