Oncologic Science on the Move: Cervical Cancer Screening

One of the cancer-related Healthy People 2010 goals is to decrease deaths from cancer of the cervix in the U.S. from 3/100,000 to 2/100,000. The basis for this goal is the tremendous impact of the Papanicolaou (Pap) test in reducing mortality from this once common and devastating cancer. Over the past 50 years, U.S. death rates have dropped by 75%, and the target is certainly possible if screening and appropriate follow-up can be extended to all women.

Given the remarkable effectiveness of cervical screening in lowering mortality, we must still recognize that the Pap test is only moderately accurate. Fortunately, the long preinvasive phase of cervical cancer and the successful public health initiatives that foster regular follow-up examinations lead to repeated opportunities to discover the neoplasm when it is curable. The NCCN Cervical Screening Clinical Practice Guidelines in Oncology provide a valuable roadmap for ensuring that appropriate steps are taken when routine examination shows abnormalities. A third factor leading to success has been the concerted educational and quality assurance programs to minimize laboratory variation and error.

Therefore, noting the two major advances in the science of cervical screening in the past several years is gratifying: the use liquid-based cytology (LBC) to process Pap specimens and the use of human papillomavirus (HPV) testing to help guide the interpretation abnormal tests.

In his review of the extensive trials comparing conventional Pap and LBC preparations, Cox notes that the new modality appears to be more sensitive in finding both low- and high-grade squamous intraepithelial neoplasms. Further analyses also point to no loss of specificity (someone without disease showing negative results), which is critical for a test that will be used for millions of women.

As with all innovations in health care today, cost must be considered. In this instance, LPC materials are more expensive, but researchers suggest that the ability to obtain HPV specimens from the initial specimen and the decrease in false-negative results, coupled with screening intervals of 2 years, will overcome the increase.

Advances in more precise identification of patients at risk for intraepithelial neoplasia through HPV testing is well described by Moore and Walker. The finding of atypical squamous cells of undetermined significance (ASC-US), which may or may not indicate underlying cervical intraepithelial neoplasia (CIN), comprises over 50% of abnormal Pap test results. Treatment was rigorously tested in the ALTS trial, which showed that finding tumor-related strains of HPV was 95.4% sensitive in detecting patients with CIN III and decreased the number of follow-up colposcopies. Based on these findings, the NCCN cervical screening guidelines have incorporated this test for following up a finding of ASC-US. Researchers also may find further applications for this test.

And so, science marches on, and dedicated professionals, with the aid of current guidelines, incorporate new tools in their efforts to better treatment and realize national goals.

Reference