POP SMEAR

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Inrtoduction

- Cervical cancer is common among women worldwide
- In developed countries, the decreases in cervical cancer incidence and mortality rates are related to the availability of screening and human papillomavirus (HPV) vaccination programs.
- The available methods for cervical cancer screening are
  - the Papanicolaou (Pap) test (ie, cytology)
  - HPV testing
  - co-testing (with both cytology and HPV).

SCREENING METHODS

- Pap testing and high-risk human papillomavirus (hrHPV) testing, either alone or in combination.

- Screening refers to testing of asymptomatic patients whose prior cervical cancer screening tests were all normal;

Types of screening and frequency

Pap testing alone

- In Pap testing alone, cervical cytology is performed to assess for cellular abnormalities;
- the suggested screening interval for Pap testing alone is every three years.
- The incidence of high-grade cytologic abnormalities is very low within three years of a normal Pap test (10 to 66 per 10,000)

Primary HPV testing

- the suggested screening interval for primary HPV testing is every five years.
- Only certain HPV tests are approved by the US Food and Drug Administration (FDA) for primary hrHPV testing (ie, Cobas, BD Onclarity),
- If hrHPV testing is positive (abnormal), reflex genotyping for HPV types 16 and 18 and reflex cytology are performed (ie, a Pap test is performed as a result of the positive HPV test).

Co-testing

- In co-testing, both a Pap test and HPV test are collected, and results are provided concurrently;
- the suggested screening interval for co-testing is every five years.

SCREENING IN AVERAGE-RISK PATIENTS

- Cervical cancer screening recommendations in average-risk patients is generally based on the patient's age.

Age <21

- We suggest **not screening for cervical cancer in asymptomatic, immunocompetent patients, <21 years, regardless of the age of initiation of sexual activity**
- The age-adjusted incidence of cervical cancer in patients ages 15 to <20 years in the United States is 0.1 per 100,000
- Adolescents are also more likely to spontaneously clear human papillomavirus (HPV) infection and associated abnormalities.

Age 21 to 29

- In our practice, we initiate cervical cancer screening at the age of 21 with cervical cytology every three years.
- Another acceptable approach is to initiate screening at age 25 with primary HPV testing every five years

USPSTF

- initiating screening at the age of 21 with cervical cytology every three years through the age of 29
- Prior to the age of 21, cervical cancer is rare
- Cytology, rather than HPV testing (either primary or co-testing), is preferred (for patients ages 21 through 29 years) based on a meta-analysis of randomized trials and observational studies that demonstrated higher false-positive rates with HPV testing because of the higher rates of transient infection in this age group

Age 30 to 65

- Any of the following strategies is acceptable in this patient population
    - Primary HPV testing (with an FDA-approved test) every five years; or
    - Co-testing (Pap and HPV testing) every five years; or
    - Pap test alone every three years

Age >65 years

- The decision to discontinue screening in average-risk patients depends on the patient's prior results, life expectancy, and preferences in a shared decision-making discussion.

If adequate prior and all normal screening

- Having no history of cervical intraepithelial neoplasia (CIN) grade 2+ for the past 25 years (see 'Surveillance in patients with abnormal ● screening' below) **and**
  - ● Having **adequate prior screening, as defined by :**
    - Two consecutive negative primary HPV tests within the past 10 years, with the most recent test within the previous five years **or**
    - Two consecutive negative co-tests (Pap and HPV testing) within the past 10 years, with the most recent test within the previous five years **or**
    - Three consecutive negative Pap tests within the past 10 years, with the most recent test within the previous three years

- If the results of screening within the prior 10 years are not known, then prior screening is **not considered adequate.**

If inadequate prior screening or unknown screening

- Patients over the age of 65 who have not had adequate prior screening or have an unknown screening history should continue with cervical cancer screening.
- For such patients, we perform co-testing annually for three years before spreading out the interval to every five years.
- Some clinicians continue screening such patients up to approximately age 80 years.

SCREENING IN HIGHER RISK PATIENTS

- **HIV** — Patients with HIV are more likely to have persistent human papillomavirus (HPV) infection and increased rates of high-grade cervical dysplasia, and they are at increased risk for the development of cervical cancer

- **Immunosuppressive therapy**-Patients without HIV who are on long-term immunosuppressive therapy (eg, solid organ transplant, allogeneic hematopoietic stem cell transplant, systemic lupus erythematous, and those with inflammatory bowel disease or rheumatologic disease requiring **current immunosuppressive treatments**) have decreased rates of clearance of HPV infection and increased rates of cervical dysplasia and cancer

Initial screening

- For patients diagnosed with HIV prior to the age of 21 years (regardless of mode of viral transmission [eg, sexual activity, perinatal exposure]), screening is initiated within one year of the onset of sexual activity, but no later than the age of 21 years. For patients diagnosed with HIV after the age of 21 years, cervical cancer screening is initiated at the time of diagnosis.

- For patients <30 years, cervical cytology is used for screening. For patients ≥30 years, either cervical cytology or co-testing (cervical cytology and human papillomavirus [HPV] testing) is acceptable for screening. Primary HPV testing (HPV testing without cervical cytology) is **not approved** for use in patients with HIV. (See 'Cytology' below and 'Co-testing' below.)

- ● We perform a screening colposcopy at this visit. This is discussed in more detail below. (See 'Routine colposcopy' below.)
- ● Given the high rate of multifocal HPV disease and HPV-associated neoplasms, the examination also includes a thorough visual inspection of the anus, vulva, and vagina