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The New 2012 Cervical Cancer Prevention & Early Detection Guidelines

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What will be covered

- Background and history on cervical cancer;
- Cervical Cancer – a sexually transmitted disease;
- Risk factors of HPV/cervical cancer;
- The new screening guidelines.

Background

- Cervical cancer is one of the few preventable cancers thanks to the cervical / endocervical cytology test discovered by Dr. George Papanicolau in the 1950's.

- Since the Pap test was first introduced the cervical cancer rate has dropped by roughly 70%.

Background

- In the 1940's and earlier, cervical cancer was a very common cancer and a major cause of death among women of childbearing age in the United States.

- Cervical cancer now ranks 14th in frequency in the United States and death rates are low.

- The rate is still high among minority and low-income women who are not screened regularly.

How are we doing in Indian Country?

- 1978-1981: AI/AN women had the highest incidence of cervical cancer among all U.S. ethnic/racial groups – 22.6 cancers / 100,000 women. (NCI SEER Data)

- 2000-2004: AI/AN women have the lowest incidence of cervical cancer among all U.S. ethnic/racial groups – 6.6 cancers/100,00 women. (NCI SEER Data)

- But the incidence of cervical cancer among AI/AN women <u>living in or near federally recognized tribal lands</u> isn't as good: 9.4 cancers / 100,000 women

  Based on data from IHS Contract Health Service delivery areas: Counties with or adjacent to tribal lands.

Background

- Most cervical cancers in the U.S. occur among women:
  - who have NEVER had a Pap (50%).
  - who haven't had a Pap in the past 5 years.

Cervical Cancer - A Sexually Transmitted Disease

- Infection with HPV is necessary for the development of squamous cervical neoplasia.
- HPV is *the* most common sexually transmitted infection; nearly 80% of sexually active adults are exposed to HPV at some time during their life.
- HPV is most common among teenagers and women in their early 20's.
- HPV prevalence decreases as women age.

HPV and Cervical Cancer

- There are over 100 types of HPV, and more than 40 can be sexually transmitted.
- 15 types are known to cause cancer.
- Types 16 and 18 cause about 70% of cervical cancers worldwide;
- Type 16 alone causes almost 50% of invasive cancers;

Risk Factors for Cervical Cancer

- Risk factors for cervical cancer are the same as risk factors for acquiring a sexually transmitted disease:
  - Multiple sexual partners and / or a male sex partner with a history of multiple partners
  - Not using condoms
  - Initiation of sexual intercourse in adolescence
  - Smoker
  - Immunosuppressed
  - Exposure to diethylstilbestrol in utero

Risk Factors for Cervical Cancer

- Lack of HPV vaccination; specifically not completing all three 3 HPV vaccinations prior to sexual debut (although 55% of AI/AN girls have been vaccinated, only 18% have received all three HPV vaccinations);

- Not engaging in recommended cervical cancer screening / not going in for follow-up care;

- Exposure to HPV viral types that cause cervical cancer.

Natural History of Cervical Neoplasia

- Most HPV-infected women don't develop significant cervical abnormalities;

- Most women, especially younger women, have an effective immune response that clears the infection or reduces viral load to undetectable levels in 8-24 months;

- HPV infections in older women are more likely to reflect persistent infections acquired in the past and not cleared by their immune system.

Persistent HPV Infections and Cervical Neoplasia

- We don't know why some women have persistent infections and most do not – this is an area of current research.

- HPV type and persistent infection are the most important determinants of progression.

- Low-grade lesions (CIN1) are not necessarily pre-cursors to high-grade lesions (CIN 2,3) or to subsequent invasive cancer.

A New Model for Cervical Carcinogenesis

- Acquisition of a high risk HPV genotype;
- HPV persistence (versus clearance);
- Progression to precancer cervical intraepithelial neoplasia or CIN grade 3 and invasion.

Primary Prevention

- HPV vaccination, ideally prior to sexual debut.

- The vaccine does not protect women against about 30% of cervical cancer caused by HPV types other than HPV-16 and HPV-18.

- Women already exposed to HPV-16 and 18 can expect lower level of protection from the vaccine than the nearly 100% protection of girls who haven't been exposed.

FDA Approved HPV Vaccines

- Gardasil®, a quadrivalent vaccine, protects against HPV types 16, 18, 6 and 11 (types 6 and 11 cause about 90% of genital warts).

- Cervarix®, a bivalent vaccine, protects against HPV types 16 and 18, the two high-risk HPV types that cause the majority of cervical cancers.

- These vaccines are effective only if given before infection, i.e., preferably prior to sexual debut.

So What's New with Screening for Cervical Cancer?

Three New 2012 Cervical Cancer Screening Guidelines

- U.S. Preventive Services Task Force (USPSTF)
  *released March 2012
- American Cancer Society (ACS)
  *released March 2012
- American College of Obstetricians and Gynecologists (ACOG)
  *released October 2012

Summary of Recommendations

- The recommendations apply to women who have a cervix, regardless of sexual history.
- The recommendations do not apply to women who:
  - have a diagnosis of a high-grade precancerous cervical lesion (CIN 2 or 3) or cervical cancer;
  - were exposed to diethylstilbestrol in utero;
  - are immunocompromised (HIV/AIDS or are on long term corticosteroids).

Screening Teenagers

- Neither ACS or USPSTF recommend screening teenagers.
- Invasive cervical cancer is exceedingly rare in adolescents (<1/1,000,000 adolescents).
- The rate of progression of CIN 3 to cancer increases with age.
- There are adverse effects (harms) of over diagnosis and unnecessary treatment of dysplasia.

Potential Harms from Screening & Treatment of Teens

- Results from two meta-analyses:
  * Significant increase in
    - Late Preterm births
    - pPROM (leading to preterm birth)
    - LBW births (resulting from preterm birth)

M Kyrgiou, et al. Lancet 2006; 367:489-498

M Arbyn et al. BMJ 2008; 337:a1284

HPV DNA Testing

- The U.S. Food and Drug Administration (FDA) has approved HPV DNA testing in conjunction with cervical cytology (Pap tests) for routine screening of women aged 30 and older.

- If the results on both the HPV DNA test and the Pap are negative, screening interval may be extended to every five years.

Summary of ACS Recommendations

- Women 21- 29 yrs: Cytology alone q 3 yrs. HPV testing should be used for screening or mgt of ASC-US in this group.

- Women 30-65 yrs: Cytology + HPV testing q 5 yrs.

- Women older than 65 don't need a Pap if they have had adequate prior screening and aren't at high risk for cervical cancer.

Summary of USPSTF Guidelines

- Women 21-65 yrs: Cervical cytology alone q 3 years. HPV testing should be used for mgt of CIN1/ASC-US.

- Women 30-65 yrs: May lengthen the screening interval to 5 years by adding HPV testing to the cervical cytology screening regimen.

- Women older than 65 yrs: No Pap required if they have had adequate prior screening and are not at high risk for cervical cancer.

Takeaway Message

- Ideal primary prevention: Completing the HPV immunization series prior to sexual debut;
- Secondary prevention: screening regimen of cervical cytology with or without concomitant HPV DNA testing.
- Both immunized and unimmunized women should be screened by the same regimen;

Questions

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Thank You