Cervical Cancer Screening in Adolescents

ABSTRACT: The American Cancer Society recently published a recommendation that cervical cancer screening should begin approximately 3 years after the onset of vaginal intercourse or no later than age 21 years. Once initiated, screening should occur annually for young women. The decision about the initiation of cervical cytology screening in an adolescent patient should be based on the clinician's assessment of risks, including 1) age of first sexual intercourse, 2) behaviors that may place the adolescent patient at greater risk for human papillomavirus infection, and 3) risk of noncompliance with follow-up visits. Patients and parents need to be provided with information about this new recommendation so they understand that there is still a need for preventive health care other than Pap testing. Additional research is needed to facilitate the provision of the best care for adolescent patients and avoid overtreatment of abnormal cervical cytology.

Background

The American Cancer Society (ACS) recommends that cervical cancer screening should begin approximately 3 years after the onset of vaginal intercourse or no later than age 21 years (1). Once initiated, screening should occur annually for adolescents (2). This recommendation is based on the consensus of a national panel of experts who reviewed evidence and concluded that there is little risk of missing an important cervical lesion within 3–5 years after initial exposure to human papillomavirus (HPV). Specific types of HPV (most notably HPV 16, 18, 31, and 45) are associated with nearly all cases of squamous cell cervical cancer (3, 4). The National Cancer Institute’s Surveillance, Epidemiology, and End Results program indicates that there were no cases of cervical cancer in females younger than 20 years (5). The ACS further supports this recommendation by stating that screening less than 3 years after the onset of vaginal intercourse may result in overdiagnosis of cervical lesions, which often regress spontaneously, and that inappropriate intervention may cause more harm than good. The ACS recommendation states that it is critical for adolescents who may not need cervical cytology testing to receive gynecologic health care, including preventive measures.
such as sexually transmitted disease (STD) testing in sexually active patients.

**Initiation of Cervical Cancer Screening in Adolescents**

Adolescent females have a higher prevalence of abnormal Pap test results (atypical squamous cells of undetermined significance or ASCUS* and above) when compared with adult females (6, 7). However, the severity of lesions tends to be lower in adolescents (7). High-grade squamous intraepithelial lesions (HSIL) still do occur in adolescents. The highest reported prevalence of abnormal Pap test results with evidence of HSIL in adolescents is 18% (6). The decision about the initiation of cervical cytology screening should be based on the clinician’s assessment of risks, including 1) age of first sexual intercourse, 2) behaviors that may place the adolescent patient at greater risk for HPV infection, and 3) risk of noncompliance with follow-up visits. Obtaining a complete and accurate sexual history is, therefore, critical.

**Assessing Age at First Sexual Intercourse**

According to the 2003 Youth Risk Behavior Surveillance Survey, 45% of female high-school students have had sexual intercourse; 62% of female 12th graders have had sexual intercourse (8). Age-specific data show the percentage of female adolescents who have had sexual intercourse increases steadily with age. Specifically, 24% of 15-year-old females, 38% of 16-year-old females, 51% of 17-year-old females, and 62% of 18-year-old females have had sexual intercourse (9). Therefore, most females are sexually active before reaching age 18 years. Non-Hispanic black females and Hispanic females begin sexual activity at younger ages than non-Hispanic white females (8, 9). One study found that only 51% of mothers of sexually active teenagers were aware of such activity (10).

One of the difficulties in caring for the adolescent gynecologic patient is that many adolescents, particularly those who begin sexual activity at a young age or experience abuse, are unlikely to acknowledge sexual activity without sensitive and direct questioning (see box “Sexual History Taking”). Therefore, they may not be screened appropriately. The sexual history should include questions about all types of sexual behavior, age at first vaginal intercourse, history of sexual abuse, number of sexual partners, and recent change in sexual partners because these factors have been linked to HPV infection (1, 11–13). An up-to-date history should be completed at each gynecologic visit with an adolescent.

**Risk Factors for Human Papillomavirus Infection**

Some adolescents may be at increased risk of HPV infection (see box “Risk Factors for Human Papillomavirus”). Prevalence of HPV infection in sexually active young women ranges from 17% to 84%, with most studies reporting prevalence greater than 30% (14). Adolescent females may be more susceptible to HPV infection than adult females because of biologic or physical factors (ie, cervical biologic immaturity) (15–17). Those women who had first intercourse (voluntary or involuntary) at a young age, have a history of other STDs, or have had multiple sexual partners are also at higher risk of HPV infection or cervical intraepithelial neoplasia or both (1, 11–13). According to the 1995 National Survey of Family Growth, 46% of women aged 15–19 years who had sex in the past year had 2 or more partners during the year (18). Immune suppression is another risk factor for HPV infection (see box “Causes of Immunocompromised States”). Studies in women with HIV infection, who undergo dialysis, or who have had a kidney transplant, demonstrate that HPV detection is particularly common with immune suppression (19–22).

**Difficulties in Follow-up for High-risk Adolescents**

High-risk adolescents often have difficulty obtaining affordable health care. They are, therefore, more likely to receive episodic care and have difficulty in returning for routine follow-up care. In the adolescent, noncompliance with follow-up appointments for abnormal Pap test results ranges from 25% to 66% (23–27).

**Abnormal Cervical Cytology and Its Overtreatment in Adolescents**

The Pap test is a screening tool, not a diagnostic tool. Those patients with abnormal cytology should be counseled and monitored closely. It is important
to avoid aggressive management of benign lesions because most cervical intraepithelial neoplasia lesions of grades 1 and 2 regress. There are no data pertaining to the overtreatment of abnormal cervical cytology. It is a concern because the surgical excision or destruction of cervical tissue in a nulliparous adolescent may be detrimental to future fertility and cervical competency. Therapy should not be a part of management in adolescents who have cervical intraepithelial neoplasia 1 (28). An acceptable option is follow-up without initial colposcopy using a protocol of repeat cytologic testing at 6- and 12-month intervals with a threshold of atypical squamous cells for referral for colposcopy, or of HPV DNA testing at 12 months with a referral for colposcopy if test results are positive for high-risk HPV DNA (29).

### Sexual History Taking

**• Discuss confidentiality**
- Inform the patient that they have a private and privileged relationship with you and identify any restrictions on the confidential nature of that relationship. For instance, the physician should explain that if the patient discusses any risk of bodily harm to herself or others, confidentiality will be breached. The physician also should discuss any state or federal privacy laws that affect the confidential nature of the relationship. In addition, state laws may mandate the reporting of physical or sexual abuse of minors.
- Inform the patient that if you feel you need to talk to the parent about something that the patient has said, you will discuss that fact and what you plan to say with the patient first.

**• Start with nontthreatening topics first and gradually move to more sensitive issues. Have all discussions about sexuality while the adolescent is dressed.**

**• Introduce the subject of sexual activity by explaining that you ask all of your patients these questions and why this information is important. Discussions should be appropriate for the adolescents’ developmental level and should identify risky behaviors.**

**• Consider using 1 of the following questions to initiate the discussion of the patient’s sexual history:**
- Are you dating anyone?
- Are you intimate with anyone?
- Are you physically close with anyone?

**• Move on to additional questions for clarification. The age of first vaginal intercourse, whether voluntary or involuntary, is critical for proper determination of Pap test recommendations.**

**• Questions need to leave room for coerced or nonconsensual sexual contact, including sexual violence, abuse, and incest.**
- Did you choose to have sex?
- Has anyone forced you to have sex?

**• Questions need to leave room for casual sex partners (who, for example, may not be perceived as “boyfriends”).**

**• Don’t assume heterosexual behavior. Establish the sex of partner or partners first. If the patient is heterosexual, consider the following questions:**
- Many girls are concerned about sex. Some girls have vaginal sex…that is, the boyfriend puts his penis in her vagina…is this something that your friends have done? Have you ever done this or thought about doing it?
- Many girls your age have sex. They also have sex in many different ways. Some girls have vaginal sex, that is, the boyfriend puts his penis in their vagina. Has this ever happened for you?

**• As you progress with the patient’s sexual history, make sure you ask about oral and anal sex, and describe what you mean by this. Anal intercourse can occur among heterosexual adolescents. It may be used by some teenagers specifically to preserve virginity and protect against pregnancy, therefore deterring the use of barrier methods and increasing the risk for human immunodeficiency virus infection and other STDs.**

**• Questions need to be asked about the number of partners and STD and pregnancy prevention methods used to assess the patient’s risks.**

**• While assuring confidentiality, the provider should encourage adolescents to discuss these issues with their parents. The provider can assist the adolescent in determining how and what to tell her parents about her sexual activity.**

**• Congratulate the patient for sharing the information with you as a demonstration of her ability to think about her sexual health and be responsible.**

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Patient and Parent Education

The new ACS recommendation may be confusing to both adolescents and their parents. Many adolescent girls and their mothers are unaware of the difference between a Pap test and a pelvic examination for any other reason (30). Therefore, they could misinterpret this recommendation as stating that a gynecologic examination or other STD testing is not needed until 3 years after first vaginal intercourse or by age 21 years. In addition, there is concern that adolescents in need of counseling or screening regarding sexual activity may have used the previous recommendation for a Pap test at age 18 as a way to justify a visit to a gynecologist to their parents. Without this justification, it is possible that adolescents will receive less care. Patient and parent education is, therefore, critical. Education should include information about the need for preventive care exclusive of the need for cervical cancer screening and recommended timing for this care. It should be stressed that adolescents should visit an obstetrician–gynecologist before becoming sexually active. Data indicate that currently this is not the case. Most (79%) young women wait 1 month or more after their first intercourse to see a health care provider, with the median wait being 22 months after first intercourse (31). The American College of Obstetricians and Gynecologists recommends that the first visit to an obstetrician–gynecologist for health guidance, screening, and provision of preventive services should take place around ages 13–15 years. This visit is even more important in light of the new cervical cancer screening recommendations and is an ideal time to begin to provide education about preventive care needs, including the need for STD testing in sexually active adolescents. This visit often does not include a pelvic examination, especially with the onset of urine-based STD screening options. Thereafter, annual preventive health care visits to a gynecologist are strongly recommended (32).

Need for Additional Research

There are limited data on the following issues pertaining to HPV infection in adolescents, and additional research in these areas is needed:

- There are limited data on the incidence of HSIL within 0–3 years after the first exposure to HPV. Based on currently available data, the average time between initial Pap test and HSIL detection is 20 months (7).
- There are limited data on the regression of low-grade squamous intraepithelial lesions and HSIL in adolescents (33). Confirmatory data are needed.
- Data on the progression of low-grade squamous intraepithelial lesions and HSIL in adolescents are lacking. Although not seen in the Surveillance, Epidemiology, and End Results program, international data show invasive carcinoma of the cervix occurs very rarely in adolescents (11).
- There are no data pertaining to the overtreatment of abnormal cervical cytology. Additional research is needed to determine the extent of this problem and appropriate ways to address it.
- Additional research is needed for better understanding of appropriate management of adolescents with cervical cytological abnormalities.

Obtaining additional data in these research areas will facilitate the provision of the best possible care for adolescent patients.

References


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