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Committee on Adolescent Health Care

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Cervical Cancer in Adolescents: Screening, Evaluation, and Management

ABSTRACT: Based on several recent studies, new guidelines for initiation of cervical cancer screening have been developed. Evidence shows that screening before the age of 21 years does not change the rate of cervical cancer in that age group or in older women. Cervical cancer, in general, is extremely rare in those younger than 21 years. Consequently, cervical cancer screening should begin at age 21 years. If cytology is performed before age 21 years, it is important to recognize that the management of cervical cytologic abnormalities in adolescents differs from that of the adult population. The publication of the American Society of Colposcopy and Cervical Pathology 2006 consensus guidelines has led to major changes in the management of cervical disease in adolescents, which emphasize minimal to no intervention. These guidelines advise against human papillomavirus testing and recommend observation for the management of cervical intraepithelial neoplasia 1 in adolescents. In addition, observation is preferred for the management of cervical intraepithelial neoplasia 2. The guidelines were established to minimize the potential negative effect that screening can cause, unnecessary referrals for colposcopy, and the negative effect that treatment can have on future pregnancy outcomes.

Natural History of Human Papillomavirus Infection

Human papillomavirus (HPV) is the most common sexually acquired infection in the world. Numerous natural history studies (1, 2) have demonstrated that as many as 50% of sexually active young women in the United States will have positive test results for HPV within 36 months of the onset of sexual activity. Recurrent infections also are common. Consequently, prevalence data indicate that up to 57% of sexually active female adolescents in the United States at any one point in time are infected with HPV (3). In adolescent patients with an intact immune system, 90% of cases of HPV infection will resolve within 24 months (4).

Cervical Cancer Screening

In the past, the American Cancer Society, the American College of Obstetricians and Gynecologists, and the American Society of Colposcopy and Cervical Pathology (ASCCP) recommended the initiation of cervical cytology screening in an adolescent based on time since onset of vaginal intercourse. However, there was much

confusion and nonadherence to the guidelines. Consequently, many adolescents were being screened inappropriately. In light of recent evidence that screening in adolescents does not appear to change the rate of cervical cancer in these groups (5), the American College of Obstetricians and Gynecologists now recommends that cervical cytology screening begin at age 21 years, regardless of the age of onset of sexual activity. The few rare cases of cervical cancer in this population do not appear to have been preventable by screening.

With the new screening recommendations, cervical cytology will not be obtained in most women younger than 21 years. An adolescent with a history of normal cytologic screening in the past should not be rescreened until age 21 years. If an adolescent has had a Pap test result of atypical squamous cells of undetermined significance (ASC-US) or low-grade squamous intraepithelial lesions (LSIL), or cervical intraepithelial neoplasia (CIN) 1 histology in the past, but has had two subsequent normal Pap test results, rescreening can be delayed until age 21 years. For adolescents with high-grade squamous intraepithelial lesions (HSIL); atypical squamous cells, cannot exclude HSIL (ASC-H); or CIN 2 or more severe,

the current management guidelines detailed in this Committee Opinion should be followed. Once regression is established based on current criteria, rescreening can be delayed until 21 years of age. Annual cytologic screening also can be considered.

It is recommended that adolescents with human immunodeficiency virus (HIV) have cervical cytology screening twice in the first year after diagnosis and annually thereafter (6). Guidelines for treatment of cervical cytologic abnormalities in individuals with HIV infection can be obtained at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5804a1.htm>. Sexually active immunocompromised adolescents, including those who have received an organ transplant or those with long-term steroid use, should undergo screening after the onset of sexual activity and not wait until 21 years of age. This screening should include Pap tests at 6-month intervals during the first year of screening and then annual Pap tests thereafter.

Human Papillomavirus Testing

Human papillomavirus testing is not recommended at any time in adolescents. Because of the high prevalence of HPV infection in adolescents, there is little utility in HPV testing in this population. There are no clinical situations, screening, triage, or follow-up that require HPV testing in this population. If conducted, a positive test result should not influence management. There is no role for HPV testing in the patient before HPV vaccination.

Management of Cervical Cytologic Abnormalities

Although nonadherence to screening guidelines can occur, the low rates of progression of cervical cytologic abnormalities and the slow rates at which progression typically occurs if the abnormality does not regress, indicate that conservative observational management should be the mainstay of care in adolescents with abnormal cytology results. The following guidelines are for management of cytologic and histologic abnormalities. These guidelines also address the situation in which screening or treatment or both took place before the release of the new cervical cytology screening guidelines in 2009.

Atypical Squamous Cells of Undetermined Significance, Low Grade Squamous Intraepithelial Lesions, and Cervical Intraepithelial Neoplasia 1

The ASCCP 2006 consensus guidelines for the management of ASC-US, LSIL, and CIN 1 in adolescents recommend repeat cytology at 12-month intervals for a period of 2 years (7–9). This recommendation is based on natural history studies of ASC-US, LSIL, and CIN 1 that demonstrate a high rate of resolution of the disease within 2–3 years (1, 10). Clinicians should perform colposcopy only for a cytologic diagnosis of HSIL at any visit or after the persistence of ASC-US or LSIL for a period

of 2 years. The management of a patient with persistent CIN 1 (greater than 24 months) should be individualized. Strong consideration should be given to continued monitoring of these adolescent patients because of the frequency of newly acquired HPV infections.

Atypical Squamous Cells, Cannot Exclude High-Grade Squamous Intraepithelial Lesions

Atypical squamous cells, cannot exclude HSIL represents a small proportion of cervical cytology results. Multiple studies have demonstrated that women who receive an ASC-H diagnosis frequently have an ongoing HPV infection (approximately 80%), and are at an increased risk of CIN 2,3 in a 2-year period (11). Because there are limited data, ASC-H in adolescents is managed with colposcopic evaluation. In women where no CIN 2,3 is identified histologically, the subsequent management approach is cytologic evaluation at 6-month intervals. If any abnormality is found (greater than or equal to atypical squamous cells), the patient should undergo a repeat colposcopy. When the patient has two consecutive normal Pap test results, screening can be reinitiated at age 21 years.

High-Grade Squamous Intraepithelial Lesions

The adolescent with HSIL requires a colposcopic evaluation with endocervical assessment. Use of the “see and treat” loop electrosurgical excision procedure for patients with HSIL who are younger than 21 years is considered unacceptable. If on biopsy no CIN 2,3 is found, observation with colposcopy and cytology at 6-month intervals is recommended for up to 2 years provided the result of the endocervical sampling is negative. If HSIL or high-grade colposcopic lesions persist at 1 year, repeat biopsy and thorough examination of the vagina is recommended. A diagnostic excisional procedure is recommended if HSIL persists at 24 months as confirmed by either cytology or colposcopy results and if the examination of the vagina does not explain the abnormality. The rationale for less intervention in adolescents is the high rate of resolution of CIN 2 in this population and the increased relative risk of preterm labor and premature rupture of membranes in women after undergoing a loop electrosurgical excision procedure (12, 13).

Atypical Glandular Cells

The prevalence of atypical glandular cells (AGC) in the adolescent population is very low, and most of these abnormalities will arise from the squamous component of the cervix (14). Because this diagnosis is rare and can have significant clinical implications, a physician with expertise in managing cervical dysplasia should manage cases of AGC in the adolescent. The adolescent with AGC should undergo a colposcopy and endocervical sampling. Endometrial sampling would not be used in most adolescents unless they are morbidly obese, they have abnormal uterine bleeding or oligomenorrhea, or there is a suspicion of endometrial cancer.

Cervical Intraepithelial Neoplasia 2,3

Cervical intraepithelial neoplasia 2 is a significant abnormality that has classically required therapy. A variety of studies, including the ASCUS-LSIL Triage Study trial, have demonstrated that this lesion may have a significant rate of resolution (up to 40%) in adults (15). This rate of resolution is suspected to be higher in adolescents. The management approach of CIN 2,3 in adolescents and young women is observation with colposcopy and cytology at 6-month intervals for up to 24 months or treatment with either ablation or with excision of the transformation zone, provided that the colposcopy result is satisfactory (7, 9). When the colposcopy result is unsatisfactory, treatment is recommended. When CIN 2 is specified on cervical biopsy, observation is preferred, but treatment is acceptable. During the observation period, if the colposcopic appearance of the lesions worsens, or if the high-grade cytology or colposcopy result persists for 1 year, a repeat biopsy is warranted. Treatment is recommended for the patient with persistent CIN 2,3 as confirmed by histology results for a 24-month period. If CIN 1 is found, continued observation is an option. In the ASCCP 2006 consensus guidelines, the definition of young women was left deliberately vague, but among the factors that should be taken into consideration in applying this definition are the number of years since first intercourse and the woman's parity and desire for future fertility.

Cervical intraepithelial neoplasia 3 is a significant cervical abnormality. Cervical cancer is very rare in the adolescent population and the natural history of CIN 3 in this population has not been examined. Therapy is recommended for all women with CIN 3. Randomized prospective clinical trials have demonstrated that cryotherapy, laser therapy, and the loop electrosurgical excision procedure are equally effective interventions for the treatment of CIN 3 (16). In one of the largest follow-up studies of women having undergone outpatient ablative therapy of CIN, four cases of microinvasive cervical cancer and five cases of frankly invasive cancer were subsequently diagnosed among 3,738 adult women (17). Because of these considerations, some authors have recommended that excision be used for the management of biopsy-confirmed CIN 3, especially for large lesions that are at increased risk of having microinvasive or occult invasive carcinoma. The type of intervention should be based on the geometry of the cervical lesion as well as the clinical recommendations of the health care provider.

Consent

Minors undergoing a colposcopic examination may find it helpful to have parental involvement for the procedure. However, colposcopic examinations are considered evaluation for sexually transmitted infections (STIs), and minors generally are allowed to consent for diagnosis and treatment of STIs. State laws should be addressed when making a decision about obtaining parental consent (18).

Consent for the examination should be obtained from the minor or parent or both, if needed. Colposcopy is likely to generate a bill, which can compromise confidentiality. This issue should be discussed with the adolescent and parental involvement should be encouraged, even if parental consent is not legally required.

Pregnancy and Screening for Sexually Transmitted Infections

Having a non-HIV STI diagnosis is not an indication for earlier cervical cancer screening. Because of high rates of STIs in adolescents, screening and treatment for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* before any cervical treatment, if appropriate, is strongly recommended (19). Pregnancy in adolescents does not alter screening guidelines. The management of cervical cytologic abnormalities in pregnant women is discussed in Practice Bulletin No. 99 (20).

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