

Sexually Transmitted Infections in Preadolescent Children

Linda C. Lewin, PhD, APRN, BC

ABSTRACT

Pediatric nurse practitioners may be called on to conduct an assessment for sexual abuse of a young child. Depending on the type of sexual contact, a decision may have to be made to obtain cultures for sexually transmitted infections (STIs). Recognizing the symptoms of STIs in preadolescent children, along with having knowledge of the modes of transmission, diagnostics, and treatment, are part of the clinical decision. The impact of STI in preadolescent children has physical and emotional consequences for the child and family, along with legal consequences for an accused perpetrator. Knowledge about types of sexual contact that necessitate STI cultures, incubation periods, and symptomatology is essential. Accurate techniques and appropriate selection of culture materials are necessary. Proper positioning of the child for obtaining cultures can decrease the potential for discomfort during the examination. Gonorrhea, *Chlamydia trachomatis*, herpes simplex virus, human papillomavirus virus, syphilis, *Trichomonas vaginalis*, hepatitis B, and HIV are reviewed. *J Pediatr Health Care.* (2007) 21, 153-161.

The incidence of sexually transmitted infections (STIs) as a result of sexual abuse in the preadolescent child is estimated to be 1% to 5% (Heger et al., 2000). The yield of positive cultures is very low in asymptomatic prepubertal children, especially those whose history indicates fondling only (Siegel, Schubert, Meyers, & Shapiro, 1995). Nevertheless, the legal and psychological consequences of STI testing for the child and family can be considerable. The decision to collect specimens for STIs in prepubertal children is based on the child's history of exposure and clinical judgment at the time of examination. False-negative results because of improper collection techniques or errors in calculating incubation periods can result in the return of a child to a high-risk environment without protection. Conversely, false-positive results due to low specificity testing can mean unnecessary separation of family members, prosecution of an innocent accused person, and the undermining of the reputation of examining nurse practitioners, pediatric sexual assault nurse examiners, and pediatricians. Only testing that has established high specificity should be used.

Preadolescent children can be exposed to sexually transmitted organisms through several routes that may or may not include sexual abuse. All forms of exposure and transmission should be ascertained during the health history. Modes of transmission in nonabuse cases include in-utero and perinatal exposure from mothers with an STI and nonsexual, genital hygiene care. STI transmission can occur in the following ways (Heger et al., 2000):

- In utero transmission of syphilis or HIV
- Vertical perinatal exposure from maternal cervical secretions of

Linda Lewin is Assistant Professor, Frances Payne Bolton School of Nursing, Case Western Reserve University, Cleveland, Ohio, and is a consultant to the Lorain County Sexual Assault Care Unit.

Correspondence: Linda C. Lewin, PhD, APRN, BC, Case Western Reserve University, 10900 Euclid Ave, Cleveland Ohio 44106-4904; e-mail: Linda.C.Lewin@case.edu.

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Neisseria gonorrhoeae, *Chlamydia trachomatis*, human papilloma virus, or herpes simplex virus

- Direct contact with infected secretions by sexual assault or abuse, autoinoculation, or fomite transmission (rare)

When sexual abuse is considered for any child, the type of sexual contact and the modes of STI transmission should be identified in the health history. Selective criteria for STI testing have been established that describe circumstances when culturing is necessary or unnecessary (Centers for Disease Control and Prevention [CDC], 2002; Ingram, Everett, Flick, Russell, & White-Sims, 1997; Ohio Department of Health, 2004). Low-risk contact such as a disclosure of

ams, 2004; American Academy of Pediatrics, 2005; CDC, 2005).

POSITIONING FOR STI SPECIMEN COLLECTION

Sexual abuse examinations of prepubertal children should be conducted with sensitivity to the child and parent to minimize distress and discomfort. Fear and anxiety that have not been addressed or failure to properly preserve modesty may lessen a child's cooperation with positioning. Also, sexually abused children may have traumatic genital injuries that could affect their comfort during the examination. Hymenal dimensions may be very small in younger females and may make "threading" a sterile cotton swab for transhy-

BOX. When to culture for sexually transmitted infection

- Child has signs or symptoms of an STI
- The known offender has an STI or is at high risk for an STI, has same gender sexual contacts, or has a history of drug abuse
- Genital trauma
- Multiple perpetrators/prostitution
- High prevalence of STI in the community
- Siblings or other household members are known to have an STI or have signs/symptoms of an STI
- History or physical indication of penetration, or history of ejaculation with skin-to-skin contact

Adapted from Centers for Disease Control and Prevention, 2002.

Modes of transmission in nonabuse cases include in-utero and perinatal exposure from mothers with an STI and nonsexual, genital hygiene care.

fondling over the clothes does not require specimen collection at the time of assessment. Cultures for this exposure are deferred to determine whether signs or symptoms occur. Higher risk skin-to-skin contact or repeated episodes of sexual abuse can increase the risk for infection and necessitate STI culturing. Specifically, STI culturing should be conducted in any of the situations listed in the Box.

When prenatal or perinatal transmission can be ruled out, identification of *N. gonorrhoeae*, syphilis, HIV, and *C. trachomatis* are diagnostic of sexual abuse. Sexual abuse is probable in the case of genital herpes, bacterial vaginosis, *Trichomonas vaginalis*, or anogenital warts with concurrent disclosure by the victim (Ad-

menal samples more difficult. Prepubertal girls experience discomfort if the surface or edges of the hymen are touched. Pharyngeal samples stimulate the gag reflex and should be collected last to minimize resistance. All of these concerns should be addressed by sufficient preparation of the child prior to the examination, information sharing with the parent, and provision of a support person during the examination.

Girls are examined in the supine "frog-leg" position and in the prone knee-chest position. Labial traction directed caudally can maximize visualization of the hymenal margins and reduce the challenge of introducing a swab through the os to the less sensitive vagina. Anal cultures are obtained in the knee-

chest position. Asking the child to bear down (Valsalva) will relax the anal sphincter and ease the introduction of a swab into the anus. Boys should be in the supine frog-leg position for penile cultures and in the prone knee-chest position for anal cultures. Very young children may feel more comfortable if positioned on the parent's lap.

NEISSERIA GONORRHOEAE

Neisseria gonorrhoeae is identified more often than any other STI among prepubertal children and is considered to be of high probability or confirmatory of sexual abuse (Adams, 2004; Thomas, Forster, Robinson, & Rogstad, 2002). Culturing is indicated when the victim has a history of a genital discharge or the perpetrator is known to have been infected. Symptoms in girls include a yellow or green vaginal discharge with odor, painful urination, or itching. Boys may report urinary urgency and fre-

quency, painful urination, or a urethral discharge. Pharyngeal and anal sites may be asymptomatic. If an *N. gonorrhoeae* culture is positive, the child's siblings in the same household or those who have been exposed to the same perpetrator should be assessed for sexual abuse and STI as well.

Cultures for *N. gonorrhoea* are taken using charcoal transwabs. The cultures are stored and transported to the testing laboratory at room temperature. Diagnostic testing using Thayer-Martin plating is the standard practice and is acceptable as court evidence. According to CDC guidelines, "all presumptive isolates of *N. gonorrhoeae* should be confirmed by at least two tests that involve different

CHLAMYDIA TRACHOMATIS

Approximately 50% of infants born to mothers with *C. trachomatis* will develop this infection in their conjunctiva, nasopharynx, vagina, rectum, or multiple sites (Hammerschlag, 1998). Perinatal acquisition of *C. trachomatis* can be found for as long as 36 months after birth (Bell et al., 1992). Sexual abuse must be considered a cause of chlamydial infection in children older than 3 years. Infections in boys and girls can be asymptomatic, so it is important to gather a complete health history, including risk factors of the perpetrator, to determine the need for the culture. Girls who are symptomatic will manifest a purulent vaginal discharge, and boys will manifest ure-

thral discharge, painful urination, and itching. Active. Argent, Lachman, Hanslo, and Bass (1995) did not identify any sexual abuse histories in a sample of 14 children with a positive DFA. The use of urine-based ligase chain reaction assay as a screening test has had promising empirical outcome; however, small sample sizes and low incidence precludes changes in accepted clinical and legal standards (Girardet et al., 2001). False-positive results can occur with respiratory tract specimens because of cross-reaction of test reagents with *Chlamydia pneumoniae*; thus, only anal and vaginal or urethral cultures are recommended. Even with genital and anal specimens, false-positive results occur because of cross-reaction with fecal flora (CDC, 2002).

The nurse practitioner should note the expiration date of the transport media for the swabs prior to culturing. Cultures for *C. trachomatis* are taken in vaginal (female) or urethral meatus (male) and anal cavities with polyester swabs. Clinicians should carefully thread the swab through the os, avoiding any contact with the hymenal edge. The sample is obtained by gently "spinning" the swab against the mucosal surface of the vaginal wall to obtain the epithelial cells necessary for *C. trachomatis* cultures. After the culture, samples should be delivered to the testing laboratory within 1 hour, with the vials on ice during conveyance. To verify the specificity, nurses should confirm that the testing laboratory uses visual identification of chlamydial intracellular inclusions with fluorescein-conjugated species-specific monoclonal antibody (Hammerschlag et al., 1999). Confirmed infections should be treated based on age and weight (see the Table). Assessment of siblings also is recommended.

HERPES SIMPLEX VIRUS

Sexual contact is the most common transmission of childhood genital herpes; however, autoinoculation from gingivostomatitis

If an N. gonorrhoeae culture is positive, the child's siblings in the same household or those who have been exposed to the same perpetrator should be assessed for sexual abuse and STI as well.

principles [i.e., biochemical, enzyme substrate, serologic, or DNA probe methods]" (2002, p. 9). This duplication of testing satisfies the legal standard to negate false positives.

Prophylactic treatment for gonococcal infection is not recommended, and treatment should only be initiated after a positive culture. The risk of developing pelvic inflammatory disease as a result of delayed treatment is of less concern in pre-adolescent girls. Prior to menarche, girls lack endocervical glands on the cervix and are less likely to develop an ascending infection. Reculturing should occur after a full course of treatment is completed (see Table).

thral discharge, painful urination, and itching.

Unjustified accusation and prosecution for child sexual abuse can occur if low specificity testing is selected. Nonculture tests for chlamydia such as immunofluorescence assay (DFA) or DNA probes should not be used in pre-adolescent children because of the possibility of false-positive results. In separate studies, DFA and DNA probe were shown to be less reliable in preadolescents than *C. trachomatis* cell culture, even though these tests are suitable for adults. Hammerschlag, Ajl, and Laraque (1999) reported four case studies of false-positive, nonculture tests using DFA and DNA probes when subsequent cell cultures for were neg-

TABLE. Sexually transmitted infections in preadolescent children

Organism	Symptoms	Transmission	Diagnostics	Interventions	Pharmacologic reference
<i>Neisseria gonorrhoeae</i> Prevalence: 1% to 5% in sexually abused children	Females (vaginal rather than cervical infection): vulvar erythema, purulent vaginal discharge (green, yellow), pruritis, dysuria, serous discharge, pharyngitis (rare), anal pain (due to contamination), may be asymptomatic (44% teens may be asymptomatic but prepubertal child almost always symptomatic) Males: urethritis, pharyngitis, proctitis Neonates: conjunctivitis	No fomite transmission documented but can survive for up to 24 h on fomites with moist secretions; can be perinatally acquired via maternal cervical secretions, with resolution in 6-12 mo if untreated; incubation: 7-10 days, but positive test may not mean abuse happened 7-10 days ago; absence of endocervical glands on cervix in prepubescent females increases resistance to infection; GC, <i>Neisseria gonorrhoeae</i> infects columnar and transitional epithelial cells, therefore pre-adolescents have less risk for PID or ascending infection; high comorbidity with <i>Chlamydia trachomatis</i> if positive for gonorrhoeae	Females: vaginal culture (not cervical) Males: meatal culture of urethral discharge Cultures should be plated onto Thayer-Martin media or sent in transport media; use rayon or polyester swabs, not wooden; positive cultures should be confirmed by two different tests to differentiate from other <i>Neisseria</i> infections	If <45 kg: ceftriaxone, dose: 25-50 mg/kg, IM (not to exceed 125 mg), single dose, or, if allergic to penicillin: spectinomycin, 40 mg/kg up to 2 g (less reliable in pharyngeal infection) If >45 kg: ceftriaxone, 125 mg, IM, single dose, or ciprofloxacin, 500 mg, orally, single dose plus azithromycin, 1 g orally, single dose or doxycycline, 100 mg, BID X 7 days Repeat cultures in 7-14 days following treatment; may need to treat for chlamydia if concurrent infection	Heger et al., 2000; CDC, 2002; British Association for Sexual Health and HIV, 2002
<i>Chlamydia trachomatis</i> Prevalence: less than 5%	Females: asymptomatic, vaginitis, urethritis, pyuria, vulvar erythema, vaginal discharge, rectal pain, vaginal bleeding Males: urethritis Neonates: conjunctivitis, pneumonitis	Fomite transmission is extremely unlikely; concomitant infection with <i>N. gonorrhoeae</i> ; perinatal acquisition via maternal cervical secretions may persist from 12-36 mo old; incubation: unknown	Culture must obtain epithelial cells (spin culture on side walls of vagina, anus); polyester or rayon swabs in specific transport media that has been refrigerated, observe date on media, transport within the hour with vial on ice; positive test should be confirmed by microscopic identification with fluorescent antibody staining; antigen testing such as DNA probes most useful in adolescent but not pre-adolescent	If <45 kg: erythromycin 50 mg/kg/day (divided QID) X 10-14 days (second course may be required) If >45 kg but <8 years: azithromycin 1 g oral, single dose If >8 years: azithromycin, 1 g orally, single dose or doxycycline, 100 mg (twice a day) X 7 days	CDC, 2002; British Association for Sexual Health and HIV, 2002
Herpes simplex Prevalence: unknown	Lesion; vesicles, pruritis and swelling on vulva, vagina, cervix, anus, inguinal adenopathy	Sexual contact most common source of infection in children; autoinoculation may be a source; no casual or fomite transmission have been shown; vertical transmission is possible during vaginal delivery; incubation 2-20 days (note: relapses can occur following treatment)	Viral culture; serologic detects prior infections or current with elevated IgM and IgG antibodies	No treatment guidelines for children; however, therapeutic safety of acyclovir during childhood has been demonstrated: acyclovir 30-60 mg/kg/day X 10 days; Sitz baths, drying agents	Heger et al., 2000

TABLE. Continued.

Organism	Symptoms	Transmission	Diagnostics	Interventions	Pharmacologic reference
Human papillomavirus Prevalence: not rare but unknown in absence of other indicators of abuse; presence of genital warts is indeterminate for sexual abuse	Genital bleeding, pain, genital discharge, asymptomatic lesions that appear as flesh-colored to purple flat warts on cervix, vulva, posterior forchette, labia, anus and penile shaft	14 biotypes (some do not affect genital or oral tracts); condyloma acuminata do affect genital tract; transmission by direct contact, autoinoculation from common skin warts and gestation/delivery (may express 2-3 y later); may be spread from infected surfaces or from diapering; most common site is anus; incubation up to 20 mo and lesions may not be obvious for months after incubation; may resolve spontaneously and then recur; associated with other STIs in children, therefore, screen for other STIs; anogenital warts do not develop in all patients with HPV	Visual inspection; colposcopy; biopsy for subtype PAP smear in adolescents (Vira-Pap)	Clinician applied: laser excision, trichloroacetic acid, 80%, applied up to 3X/wk followed by application of wet towels or fanning to reduce discomfort; podophyllin is not recommended for children due to neurotoxin potential Patient applied: imiquimod 5% cream 3X/wk at bedtime, leave on for 6-10 h, then wash off, for 16 wk For prevention of HPV subtypes 6, 11, 16 and 18, immunization (Gardasil) should be given routinely to females 11-12 y and at the discretion of the practitioner to females who are 9 y	Boyd, 1990; Heger et al., 2000; CDC, 2006; FDA, 2006
Syphilis (<i>Trichomonas pallidum</i>) Prevalence: 0-1.8%, rare	Males: Primary: ulcer, chancre, heals spontaneously; firm, painless ulcer with raised borders, groin lymph nodes, lesions can be genital, oral or perianal, heals with a scar Secondary: (develops 2-10 wk after chancre heals), nonitchy skin rash, flulike symptoms, meningitis, kidney, liver and eye may become infected Tertiary syphilis: neurologic changes including dementia Parkinsonian movements, cardiovascular changes, granulomas in skin and musculoskeletal system	Incubation: 10-90 days for primary lesion; in utero transmission via placenta and amniotic fluid (should consider if acquired younger than 1 y); after 1 y old, nearly always sexually transmitted Secondary: rash may appear 1-7 mo following exposure	Screening: RPR and VDRL (serologic)— generally 4-8 wk to convert to positive following exposure, may be positive in Lupus; use confirmatory testing if screening is positive: MHA-TP, FTA	Bicillin LA (penicillin G benzathine) 50,000 units/kg IM X1 (maximum dose 2.4 million units)	Shapiro, 1994; CDC, 2002

TABLE. Continued.

Organism	Symptoms	Transmission	Diagnostics	Interventions	Pharmacologic reference
<i>Trichomonas vaginalis</i> Prevalence: more common in sexually active teens, rare in prepubertal Children	Female: vaginitis, itch/purulent discharge, asymptomatic Male: Neonate: infection in infant vagina or urinary tract up to 1 y No known fomite transmission	Rare in prepubertal vagina, does not colonize in mouth or anus/gastrointestinal	Cultures in trichosol media (95% sensitive); wet mount (50% sensitive)—positive should be followed by culture to differentiate from <i>T. hominis</i> ; PAP smear (50% sensitive); occasionally detected in urine sample	Child: metronidazole 40 mg/kg, single dose, or 15 mg/kg/day in 2 divided doses X7 days	Heger et al., 2000
Hepatitis B virus	More commonly: rash arthralgia, jaundice; less commonly: fever nausea/vomiting, pruritus	Sexual contact, IV drug use; perinatal acquisition from infected mother or mother as carrier Incubation: 45-180 days	Serologic markers: elevated AST, ALT with elevated serum bilirubin levels 5-10 after jaundice appears Presence of hepatitis B surface antigen (HBsAg)	Immunization: postexposure: (1) protection by HPB vaccine if given immediately after exposure, (2) rest, (3) plasma interferon	CDC, 2002
HIV Prevalence: unknown		Neonatal vertical transmission should be discussed with child's mother; IV drug use with shared needle from infected; sodomy; vaginal penetration	Routine screening not indicated; screening if: (1) vaginal or anal penetration by multiple perpetrators or unknown assailant; (2) other STD; (3) perpetrator known to have HIV; (4) high-risk behaviors (homo/bisexuality, IV drug use) Testing at 3, 6, 12 mo after contact (informed consent from parent prior to testing); screening by EIA/ELISA, positives should be repeated	Refer to pediatric HIV specialist for postexposure prophylaxis	

ALT, Alanine aminotransferase; AST, aspartate aminotransferase; BID, twice a day; CDC, Centers for Disease Control and Prevention; EIA/ELISA, enzyme-linked immunosorbent assay; FTA, fluorescent titer antibody; HPB, hepatitis B; IM, intramuscular; MHA-TP, microhemagglutination-Treponema pallidum; PAP, Papanicolaou; PCN, penicillin; PID, pelvic inflammatory disease; QID, four times a day; RPR, rapid plasmin reagin; VDRL, Venereal Disease Research Laboratory.

(commonly referred to as cold sores) also can be a source of genital herpes (Hammerschlag, 1998). The incubation period for herpes is 2 to 20 days; however, relapses can occur intermittently following the initial infection. It may be difficult to determine the timing of the initial infection unless there is a very clear history (Heger et al., 2000). HSV should be considered if ulcers or vesicles are present on the vulva or anus. Sitz baths, analgesics, and topical drying agents can be used for comfort during an acute outbreak. Other prescribed treatment is summarized in the Table.

HUMAN PAPILLOMAVIRUS (GENITAL WARTS)

Genital warts or condylomata acuminata are caused by human

Kirse, and Sinal (2005) reviewed medical records of 124 children younger than 13 years who were diagnosed with HPV. They found greater likelihood of HPV-positive children in sexually abused children with increasing ages.

Even though genital warts can occur from casual contact, a thorough social and health history is necessary when these lesions are present in the prepubertal child. Given the lack of incontrovertible evidence, nurse practitioners should evaluate all children with genital warts for the possibility of sexual abuse, including an interview and physical examination. Referral to protective services for young children (younger than 2 to 3 years) should be determined by the health history of the mother

participants, but the immunization was found to be very effective in preventing the HPV subtypes that cause 70% of cervical cancers (types 16 and 18) and 90% of genital warts (types 6 and 11). The pharmaceutical company (Merck) has agreed to conduct long-term studies to determine general safety and long-term effectiveness and to monitor pregnancy outcomes of those who have been immunized while unknowingly pregnant. Although it is not effective in females who contracted one of these HPV subtypes prior to immunization against that subtype, it can be effective in preventing the other subtypes. The CDC Advisory Committee on Immunization Practices recommends offering the vaccine routinely to girls who are 11 to 12 years of age and to girls as young as 9 years at the discretion of the practitioner (CDC, 2006). Studies for the use in males are currently being conducted.

SYPHILIS

The causative organism of syphilis is *Treponema pallidum*. Syphilis in young children is more commonly transmitted in-utero from infected mothers than through sexual contact (Hammerschlag, 1998). If anogenital lesions are present on a preadolescent, or if a child has had genital contact with an infected person or lives in a high-incidence community, then serologic testing should be conducted. Testing for syphilis also should be considered if the child has positive cultures for gonorrhea and/or chlamydia.

The incubation period for syphilis is 10 to 90 days. It is important to try to establish the most recent contact between the child and the suspected individual in order to test outside of the incubation period. Premature testing may result in a false negative. Screening tests include Venereal Disease Research Laboratory (VDRL) and Rapid Plasma Reagin (RPR). False positives can occur in nontreponemal

The Food and Drug Administration has approved a cervical cancer immunization that is effective in preventing infection from HPV types 6, 11, 16, and 18.

papillomavirus (HPV). They appear as flesh-colored to purple growths and are found on the anus, corona, glans, prepuce and penile shaft in boys and the anus and occasionally on the urethra and labia in girls (Boyd, 1990). The majority of subtypes of HPV infect cutaneous sites, but 14 subtypes are known to infect mucosal sites (Heger et al., 2000). Verifying HPV transmission by sexual abuse can be a complicated process. Perinatal transmission of HPV has been documented; therefore, the occurrence in a child younger than 3 years may not be forensically significant. Nonsexual transmission of HPV by autoinoculation or heteroinoculation can occur from scratching, bathing, or diapering (Robinson, 1998). Sinclair, Woods,

and household members' and child's history and clinical presentation. Protective service referral should be routine for children older than 4 years with genital warts (Sinclair et al., 2005).

Recently, the Food and Drug Administration (2006) has approved a cervical cancer immunization that is effective in preventing infection from HPV types 6, 11, 16, and 18. Prior to approval for release, it was tested in approximately 11,000 individuals and was found to be effective in developing immunity in females as young as 9 years. It is a recombinant vaccine that is given as three injections over a 6-month period. The evaluation period for the immunization was not long enough for cervical cancer to develop in the study par-

tests; therefore, additional testing is needed. If either the VDRL or the RPR is positive, treponemal confirmatory tests (MHA-TP or FTA) should be performed (CDC, 2002).

Syphilis evolves in three phases: primary, secondary, and tertiary. Primary syphilis presents as an ulcer or chancre on the penis or labia that can heal spontaneously. The chancre may only be visible in males. Secondary syphilis presents as a diffuse rash that covers the trunk, palms, and soles. The rash may disappear spontaneously in 1 month. Tertiary syphilis is manifest in cardiac, ophthalmic, and auditory abnormalities along with soft tumors. Treatment recommendations are summarized in the [Table](#). The data regarding the use of

The diagnosis of *T. vaginalis* can be challenging depending on the site of the culture sample and the type of laboratory testing. Some clinicians attempt to diagnose using microscopic wet mount, but this is affected by subjective interpretation. Also, *Trichomonas hominis*, an intestinal inhabitant, may be mistakenly identified as *T. vaginalis*. Pharyngeal samples are not recommended because of low yield or laboratory use of culturing systems that do not distinguish between *C. trachomatis* and *C. pneumoniae*. Nonculture tests such as probes, enzyme-linked immunosorbent assay (EIAs), and direct fluorescent antibody (DFA) are not specific enough for use in child sexual abuse (CDC, 2002). [Hammerschlag \(1998\)](#) recommends

and the presence of HBsAg without IgM anti-HBc is found with a chronic HBV infection (CDC, 2002).

HIV

HIV is uncommon in young sexually abused children. [Gellert, Durfee, Berkowitz, Higgins, and Tubiolo \(1993\)](#) found that of 5622 HIV testing incidences (out of 113,198 sexual abuse assessments), 28 children were infected with HIV that lacked any alternative transmission route. Sixty-four percent of those who tested positive for HIV were female, and 71% of the victims were African-American. Forty-two percent of the perpetrators were parents, and 25% were another relative.

The risk of transmission by a single contact is not known. Screening for HIV should occur in high-risk abuse, including (a) the offender is known to be HIV positive or an intravenous drug user or has engaged in homosexual intercourse, (b) vaginal/rectal penetration by multiple perpetrators or an unknown perpetrator, or (c) other sexually transmitted diseases have been confirmed in the victim. Screening by EIA should occur at the time of initial examination to establish a baseline within 2 weeks of exposure and at 3, 6, and 12 months following last known contact. Reactive tests should be confirmed by Western blot or an immunofluorescence assay (CDC, 2002).

[Atabaki and Paradise \(1999\)](#) summarized other literature when they stated that there is no clear direction to prophylactic treatment following high-risk exposure. Regular updates regarding treatment are available via the following Web site: <http://aidsinfo.nih.gov>. Data are insufficient concerning the efficacy and safety of postexposure prophylaxis among both children and adults; however, the CDC Guidelines state that "antiretroviral treatment is well tolerated by infants and children with and without HIV infection; in addition,

STIs in preadolescent children have the potential for serious physical and psychological health outcomes.

other antimicrobial agents, other than penicillin, for treatment are insufficient. When treating children who have a history of penicillin allergy, they should be desensitized and then treated with penicillin (CDC, 2002). Children should be seen 8 weeks following treatment for repeat serologic testing.

TRICHOMONAS VAGINALIS

The presence of *Trichomonas vaginalis* is highly suggestive of sexual abuse if it occurs beyond the first year of life. Because it is site specific, it is rare that it can be transmitted by nonsexual modes ([Thomas et al., 2002](#)). Vulvovaginitis is the most common presenting symptom, with an itchy, purulent discharge; however, it also may be asymptomatic.

the use of several media, including Diamond's and modified thioglycolate.

HEPATITIS B

Infants should be immunized with hepatitis B vaccine (CDC, 2005). The incidence of hepatitis B in sexual abused preadolescent children is unknown but is certainly a concern in children who have not been immunized. Hepatitis B (HBV) is transmitted to mucous membranes by contact with infected body fluids including blood, semen, vaginal secretions, and wounds. Clinical presentation includes a rash, jaundice, arthralgia, and fever or pruritus. The diagnosis of acute or chronic HBV must be confirmed by serologic testing. The presence of IgM antibody to hepatitis B core antigen is diagnostic of acute infection,

children who receive such treatment have a minimal risk for serious adverse reactions because of the short period of time recommended for prophylaxis" (2002, p. 120). Because of the complexities of multiple pharmacotherapies, drug interactions, adverse effects, and regularly emerging empirical studies, pediatric nurse practitioners should refer children exposed to HIV to a pediatric HIV specialist. For additional information, practitioners can consult <http://www.hivatis.org> for guidelines for pediatric HIV infection.

SUMMARY

STIs in preadolescent children have the potential for serious physical and psychological health outcomes. Failure to culture or culturing with inappropriate techniques in clinically indicated situations can result in delay or failure to treat. However, with prevalence rates for preadolescents that are less than 5% in empirical studies in the United States, universal culturing for sexually transmitted diseases can cause unnecessary discomfort and expense. Knowledge of perinatal acquisition, prevalence rates, incubation periods, and treatment choices for STIs is necessary for the nurse practitioner's decisions in the care of the child with a sexual abuse history.

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