Management of Sexually Transmitted Diseases in Adolescents after Sexual Abuse

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Abstract

Sexual abuse is a widespread health problem across the world. Sexual abuse of adolescents is a very important issue that is potentially damaging to their mental and physical health. Sexually abused adolescents are at a higher risk of developing sexually transmitted infections, including infection with the human immunodeficiency virus (HIV), than children. Therefore, they should be screened for all sexually transmitted infections and evaluated for prophylaxis. *(J Pediatr Inf 2015; 9: 76-80)*

Keywords: Sexual abuse, adolescent, sexually transmitted infections

Introduction

Sexual abuse is a serious health problem in our country as well as across the world. Sexual attacks and abuse against adolescents is the case of a stronger adolescent or an adult taking advantage of the victim sexually. Approximately 5% of the abused cases acquire sexually transmitted disease (STD). Therefore, in the case of a sexual attack, diagnosis and treatment of STD is the most important part of the management of these cases (1). The abundance of adolescent age group cases regarded as judicial cases are quite noticeable and in a study inclusive of all age groups in our country, the average age was found 16.78±7.16 (2).

The risk of STD following sexual assaults varies in accordance with the factors such as regional differences, the abundance of assailants, the type and number of the abuse, virulence of the faced pathogens, the previous sexual activities of the victim and the previous microbial therapies. It was reported in the prospective studies that the risk of acquiring STDs following sexual assaults was 4.3% (cases where the victim reported not to be sexually active in the last three months before the attack) and 14.4% (cases where the victim reported to be sexually active in the last three months before the attack) (3.4). Whereas these studies reported the risk of bacterial vaginosis prevalence following the attack as 19.5%, the risk for trichomoniasis was reported as 12.3%, for *Neisseria gonorrhoeae* infection 6-12% and for *Chlamydia trachomatis* 4-17% (3.4). In the cross-sectional study they carried out in the United Kingdom and the Republic of Ireland in which they investigated *N. gonorrhoeae, C. trachomatis, Trichomonas vaginalis* and *Treponema pallidum* infections, which are among the sexually transmitted diseases in children aged 1-13 and adolescents within the period of 25 months, Reading et al. (5) found SDTs that developed as a result of these factors in 15 cases. In this study, sexual abuse was proved in only three cases and STD incidence based on these factors was reported to be 0.075:100 000 year. It should be remembered that the infections that develop as a result of these factors also in general have other ways of transmission other than sexual abuse as the victims become younger (6).

Every assault case should be investigated independently from one another and its management should be planned. The tests to be done and cultures to be taken should be selected based on the type of the assault. This study aimed to question what type of management could be considered for the tests to be carried out for what type of adolescents. Especially in the presence of the situations below, the need for investigation increases:

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*STD symptoms despite the non-existence of an abuse history

* The suspected assailant has STDs diagnosis or greater suspicion of STDs (such as multiple sexual partners or a previous STD history)

* Insistence of the adolescent and/or the family on an investigation

* Sexual assault has resulted in genital, oral or anal penetration and the presence of ejaculation

The tests to be done based on the suspected STD type are illustrated in Table 1. Many experienced experts on this subject recommend these tests to be done comprehensively as the adolescents especially may have the possibility of an underlying asymptomatic infection. As far as individual cases are concerned, the necessary tests should be decided in consideration of history, physical examination and regional data. The tests should include *N. gonorrhoeae, C. trachomatis, T. vaginalis,* HIV, HBV and bacterial vaginosis (7, 8).

Similarly, there are some sources that state that the necessary tests can be demanded for the herpes virus if there is clinical need for it (e.g. Genital vesicles) (9). In a scanning done in our country, HSV-2 IgM serapositivity was found 7.3% (10). The brief use of acyclovir and prophylaxis, which do not have an important side effect against HSV-2 following a sexual abuse, can be the subject of future studies.

As these tests are to be used as legal evidence, all the labelling and laboratory transfers should be done with great care and monitored. The tests should be selected among those that have highest level of specificity and precision due to the sensitivity of the sexual abuse. The value of nucleic acid amplification tests to be done for gonore is limited and their precision depends on the tests. For the interpretation of this test and for the cross-reactions likely to be formed by the Neisseria strains, a specialist should be consulted. NAATs tests can be used for *Chlamydia trachomatis* as confirmation in cases where the results were obtained through another tests or where culture tests are not possible. For gonore and chlamydia, it may be necessary to take cultures from the regions where there was contact such as vagina or cervix, anus and pharynx. The results of these culture tests have the quality of golden standard evidence in the law (11, 12).

The case should be examined again and this examination should be carried out nearly 2-6 weeks after the last detected abuse and additional samples should be taken after this evaluation. In the follow-up, another evaluation should be done after 3 or 6 months; serologic tests may need to be carried out for syphilis, HIV and if necessary hepatices B (9).

Prophylaxis after the sexual abuse

While many specialists today do not recommend a routine antimicrobial prophylaxis following a sexual abuse before adolescence, since the presence of previously acquired asymptomatic infection in those who presented with in the first 72 hours after the assault in adolescence especially in girls is very risky for the new infections to be acquired from the assailant and pelvic inflammatory disease in this age group, many specialist commonly believe that prophylaxis should be given to this group (7). All those to whom prophylaxis has been given should be screened for the likely related STDs (Table 1). The cases that are beyond their menarch period should be examined for pregnancy before the onset of infection prophylaxis or urgent contraception. The prophylaxis to be given is presented in Table 2. The ampirical treatment to be given should include *N. gonorrhoeae, C. trachomatis, T. vaginalis,* HIV, HBV and bacterial vaginosis.

It was demonstrated that the prophylaxis applied against perinatal or occupational exposures was effective

Table 1. STD tests in sexually abused cases (11)

Microorganism/ Infection disease	**Test**
Neisseria gonorrhoeae	Rectum, throat, urethra (in males), and vagina cultures
Chlamydia trachomatis	Rectum, urethra (in males), and vagina cultures
Syphilis	If there is one, dark-field investigation from the chancre, blood samples 6, 12 and 24 weeks after the abuse for serologic tests
Hepatitis B virus	If the victim was not vaccinated three doses of hepatitis B, assailant's and victim's hepatitis B surface antigens are examined
Herpes simplex virus (HSV)	Viral culture from the local sample, additionally if the lesion is big and closed polymerase chain reaction test
Bacterial vaginosis	Wet preparate from vaginal secretion, pH and potassium hydroxide test or gram staining
Human papilloma virus	Physical examination, additionally lesion biopsy if the diagnosis is suspicious
Trichomonas vaginalis	Wet preparate from vaginal secretion or culture
Pediculosis pubis	Seeing the eggs, larvas and phthirus with naked eyes or via magnifying glasses

Table 2. Prophylaxis in adolescent cases after sexual abuse (8, 11, 12)

For N. Gonorrhoeae infection	Ceftriaxone, 250 mg, IM, one dose or Cefixime, 400 mg, oral, one dose
For C. Trachomatis infection	Azithromycin, 1 g, oral, one dose or Doxycycline, 100 mg, oral, two times a day for seven days (in the absence of pregnancy)
For trichomoniasis and bacterial vaginosis	Metronidazole, 2 g, oral, one dose
For hepatitis B virus	It is administered if the hepatitis vaccination is not complete in the first examination. Booster doses 1-2 months and 4-6 months after the first dose
For HIV infection	It changes according to the regional conditions and characteristics of the abuse
Urgent contraception	
Levonorgestrel 1.5 mg only once or From 20-30 µg etinil estradiol from the oral contraceptive drugs + 0.1-0.15 mg levonorgestrel or 0.3 mg norgestrel-inclusive drugs, 2 pieces at one time, once every twelve hours for three days	

Table 3. HIV prophylaxis recommendation after the abuse by the AIDS Institute of the New York Regional Health Unit (19)

10 years old - 13 years old	Zidovudine (9 mg/kg, two times a day) + Lamivudine (4 mg/kg, two times a day) + Lopinavir/Ritonavir (Lopinavir 10 mg/kg / Ritonavir 2.5 mg/ kg two times a day)
>13 year old	Zidovudine 300 mg PO, two times a day + Lamivudine 150 mg PO, two times a day [Combined treatment: Combivir 1 tablet PO , can be given two times a day] + Tenofovir 300 mg PO , one dose a day or Zidovudine 300 mg PO, two times a day + Emtricitabine 200 mg PO one dose a day+ Tenofovir 300 mg PO one dose a day
AIDS: acquired immun deficiency syndrome; HIV: human immunodeficiency virüs; PO: peroral	

in preventing the HIV infection. Together with this information, in the cases that suffered from sexual abuse in this childhood adolescence, the question of 'how useful HIV prophylaxis is' is one of those questions begging for an answer. After only one sexual attack, it has a low risk for HIV to be transmitted through secretions or blood-borne from the abuser to the victim (13). It was reported that HIV transmission risk in cases that were exposed to ejaculation after vaginal or anal penetration in sexual abuse cases was 2 in 1000. This ratio is very low in comparison to syphilis, gonore and HBV transmissions in the STD after the sexual abuse. The researchers in this study are of the opinion that the tests to be done or the prophylactic therapy to be started right after the assault will not be useful (14).

However, in the case of the victim who presented with in the first 72 hours experienced mucosal exposure in the secretions, in the case of a repetitive abuse, in the presence of oral, vaginal and/or anal trauma and especially if the assailant is known to be HIV positive or has the high risk of it, commencing prophylaxis against HIV should be considered (9). Prophylaxis should be commended within the first four hours if possible, if not, at least in the first 72 hours. On a case basis, in the case of an assailant who is known to be HIV positive has a contact in the oral, vaginal or anal regions, traumatization of these regions, the type of the region subjected to ejaculation, the viral load during ejaculation and having a underlying STD will change the need for prophylaxis. In general, even though the use of antiretroviral agent is recommended following the needle puncture, the same recommendation is not offered after an assault (13). Some research articles suggest that all the victims can be offered HVI prophylaxis in the first 72 hours after the assault; the rationale of this suggestion lies in the fact that the HIV transmission risk is known following the sexual assault. Due to the nature of the possible sexual assault, the contact is more traumatic and this eventually increases the risk of transmission (15). If it is the case of the assailant known to be HIV positive, an experienced infection specialist should be consulted and the 28-day prophylaxis treatment should be commenced as soon as possible. However, there is no clinical study in the literature on the use of HVI prophylaxis for adolescent patients (16, 17).

There is no clinical data on which regime is better and more effective in the applications of antiretroviral prophylaxis after sexual abuses. AAP stated in 2002 that in the presence of prophylaxis indications, many clinicians preferred the prophylaxis three-drug regime inclusive of zidovudine, lamivudine and nelfinavir; however, due to the possible toxicity and side effects of the drugs, some clinicians preferred the duo prophylaxis regime of zidovudine and lamivudine (18, 19). Today, the guidebooks recommend the three-drug treatment regime. In Table 3, the New York regional Health Unit presented the antiretroviral prophylaxis practices that the AIDS Institute recommended for the childhood age group and adolescents after the abuse. All the patients to whom prophylaxis is given and

their families should be clearly informed of the efficiency of antiretroviral prophylaxis and the toxicity of the drugs together with their possible side effects.

The cases who have not had HBV immunization or who have hepatitis B vaccine non-responsiveness should be administered the first dose of HBV immediately (20-22). Subsequent to the first dose, two doses of the vaccine in compliance with the HBV vaccination schedule are administered (In the 1st and 6th months). If the sexually assaulted adolescent was previously administered the hepatitis B vaccine and the response is known, regardless of the serologic indicators of the assailant against the hepatitis B infection, active or passive immunization is not recommended with the anticipation that the victim will not suffer from transmission (22). If the assailant's hepatitis B surface antigen (HBsAg) positivity is known and the assaulted victim does not have hepatitis B vaccination, or the victim has hepatitis B non-responsiveness, the patient, together with the vaccination, should be administered hepatitis B immunoglobulin with the dose of (HBIG) 0.06 mL/kg (22, 23). If the victim has "real hepatitis B vaccine non-responsiveness" (the case of Anti-HBs level being ≤ 10 IU/L following the second hepatitis B vaccine schedule due to the hepatitis B vaccine non-responsiveness), administration of the second HBIG is recommended after the first month (22).

If the adolescent is known to be pregnant during the assault and if the first trimester is passed, erythromycin or azithromycin therapy instead of metronidazole and doxycycline treatment is preferred. Finally, tetanus prophylaxis is also recommended in unvaccinated cases (24).

Conclusion

In conclusion, sexual abuse is a health problem that is mostly ignored in our country as well as all over the world. As far as the evaluation of sexually abused adolescents is concerned, considering the STDs in the early stages and giving the necessary preventative treatments are the basis for the management of these cases.

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