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EM CASE OF THE WEEK

BROWARD HEALTH MEDICAL CENTER DEPARTMENT OF EMERGENCY MEDICINE

AUTHOR: MICHAEL GONZALEZ, MS IV
EDITOR: ANDREA SARCHI, DO

The lifetime prevalence of sexual assault in the US is about 20% in women and 3% in men. The majority of sexual assault victims have some acquaintance with their attackers. Only 10 to 15% of all sexual assaults will be reported to the police. This month we explore the management of sexual assault victims.

EM CASE OF THE WEEK

EM Case of the Week is a weekly "pop quiz" for ED staff. The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

Sexual Assault

A 31 year old female presents to the ED after being sexually assaulted last night. She states she at first gave consent, but later changed her mind and was forced to have intercourse against her will. She states she only had vaginal intercourse and no condoms were used. She denies any injuries or loss of consciousness. She is concerned about the possibility of getting pregnant and catching a sexually transmitted infection. Her FDLMP was 25 days ago. She does not want to press charges. However, she is requesting a rape kit. Which of the following is true regarding her probability of becoming pregnant and acquiring HIV if the assailant is HIV positive?

A. The patient has ~10% chance of becoming pregnant and acquiring HIV.

B. The patient has ~15% chance of becoming pregnant and acquiring HIV.

C. The patient has ~15% chance of getting pregnant and a 0.1% chance of acquiring HIV.

D. The patient has ~0.1% chance of getting pregnant and acquiring HIV.

E. The patient has ~10% chance of becoming pregnant and a 2% chance of acquiring HIV.

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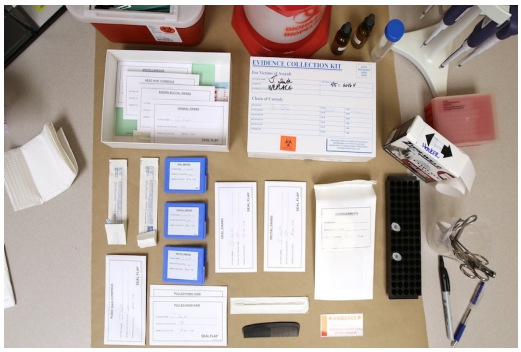
Broward Health Medical Center
Department of Emergency Medicine
1625 SE 3rd Ave
Fort Lauderdale, FL 33316



Take Home Points

- Medical assessment with a focus on acute injuries should occur first.
- Evaluation of sexual assault should be performed by a trained provider within 72 hours of assault.
- Empiric therapy for STIs include a one-time dose of ceftriaxone, azithromycin, and metronidazole.
- Single dose of levonorgestrel 1.5 mg is recommended as emergency contraception over the Yuzpe regimen.
- Mental health services should be offered to sexual assault victims due to the risk of developing anxiety, depression, and PTSD.

Sexual Assault

The correct answer is C. The probability of pregnancy after unprotected intercourse is estimated at 15% 3 days before ovulation, 30% 1 to 2 days before ovulation, 12% on the day of ovulation, and 0% 1 to 2 days after ovulation. Based on an average menstrual cycle of 28 days and given the fact that the patients FDLMP was 25 days ago, this patient is 3 days before ovulating. The risk of HIV transmission from a single episode of vaginal intercourse with an HIV infected man is about 0.1%, and 2% from a single episode of anal intercourse. Given that the patient had vaginal intercourse, she has ~0.1% chance of acquiring HIV. However, the risk of transmission after sexual assault is likely to be higher since there may be associated trauma and bleeding.

Discussion.

Assessment:

In triage and intake, before forensic evidence is collected, prompt medical assessment responding to acute injuries and the safety needs of patients should be considered first. Examiners should be alerted immediately: these include a forensic examiner, sexual assault nursing examiner (SANE), and sexual assault response team (SART). Physicians should not collect evidence unless properly trained. When evaluating a sexual assault victim, it is important to provide comfort while obtaining a detailed history about the event. Information regarding circumstances of the assault, time, location, use of weapons, specifics regarding oral/vaginal/anorectal penetration, bleeding, trauma, physical description of the assailant, use of drugs or alcohol, use of condoms, and recent consensual sexual activity before or after the assault should all be obtained. Victims should also be asked if they have showered, changed clothes, used mouthwash, and/or used enemas since the incident. For women, physical examination should involve the breasts, external genitalia, vagina, anus, and rectum. Common sites of genital injury include the posterior fourchette and the labia minora. Genital trauma occurs more commonly in postmenopausal women and adolescents. Colposcopic examination can enhance detection of areas of milder genital and anogenital trauma and is now performed by most SANE programs. A Wood's lamp or other UV light source may help identify foreign debris and semen on the skin.

For men, penile examination should focus particularly on the glans and frenulum, and should also assess for urethral discharge. Rectal examination should be considered, and performed if there was anal penetration. The prostate should be assessed for tenderness.

Forensic evaluation:

Forensic evaluation should be offered to victims of abuse. The victim's clothing, swabs from all mucosal surfaces and other areas highlighted by ultraviolet light, specimens from scalp and pubic hair, fingernail scrapings and clippings, and blood and saliva samples should be collected. Sperm can be detected within vaginal samples up to 72 hours and anal samples up to 24 hours after the assault.

Laboratory evaluation:

Laboratory evaluation should focus on trauma assessment and testing for sexually transmitted diseases and pregnancy. Testing may be forgone if patients plan to take prophylactic treatment for infections. The recommended test for chlamydia and gonorrhea is nucleic acid amplification testing and for trichomonas is wet mount and culture of a vaginal swab. Wet preps may also show motile sperm. Serum testing for HIV infection, hepatitis, and syphilis should be considered on an individual basis. Pregnancy testing should be done for women of childbearing age. Drug screening for flunitrazepam, gamma-hydroxy butyrate (GHB), and other drugs should be done selectively.

Treatment.

Fractures, soft tissue injuries, and other traumatic injuries should be treated appropriately. Empiric antibiotic prophylaxis is recommended since many assault victims will not return for a follow up. Patients who decline prophylaxis should be seen one week after the initial evaluation for testing of acquired infection.

Gonorrhea, Chlamydia, and Trichomonas:

Empiric therapy for gonorrhea and chlamydia includes ceftriaxone 250 mg IM plus either azithromycin 1 g PO once or doxycycline 100 mg PO twice daily for seven days. For trichomoniasis one dose of Metronidazole 2 g PO can be used.

Hepatitis B:

The CDC recommends post exposure hepatitis B vaccination and Hep B IG if the assailant is known to have hepatitis B infection. Follow up vaccine administrations should be done at one and six months. Vaccination is not necessary if the patient has had previous hepatitis B vaccine and documented immunity.

HIV:

Post exposure HIV prophylaxis is controversial. In high risk patients, antiretroviral drugs are best started within four hours of assault, and should probably not be prescribed if more than 72 hours has passed. One possible regimen includes tenofovir/emtricitabine 300/200 mg once daily plus dolutegravir 50 mg once daily for four weeks.

Emergency Contraception:

It is recommended that levonorgestrel 0.75 mg q12h for 2 doses or 1.5 mg as a single dose can be used for emergency contraception. One alternative is the Yuzpe regimen, which is 100 mcg of ethinyl estradiol and 0.5 mg of levonorgestrel q12h for 2 doses. It is considered 75 to 80% effective if administered within 72 hours of intercourse. Another alternative is Ulipristal, which is effective up to 120 hours after intercourse and is the preferred drug beyond 72 hours after unprotected intercourse.

Psychosocial Issues:

Sexual assault victims require extensive emotional support and should be offered mental health services. Victims are at increased risk for a number of psychological and behavioral adverse effects. These include posttraumatic stress disorder, anxiety, depression, suicide attempts, and misuse of prescription sedatives/stimulants/steroids/analgesics. Physical adverse effects include irregular menses, pelvic pain, dyspareunia, urinary infections, decreased sexual satisfaction, and increased risk for cervical cancer.

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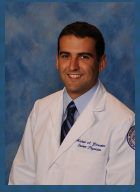

ABOUT THE AUTHOR:
This month's case was written by Michael Gonzalez. Michael is a 4th year medical student from NSU-COM. He did his emergency medicine rotation at BHMC in November 2015. Michael plans on pursuing a career in Internal Medicine after graduation.