PRIMARY CARE

MED437

Sexually Transmitted Infections

Objectives:

- the basic concepts of approaching a sexual history.
- Recognize that sexually transmitted infections (STIs) are caused by a wide array of organisms.
- Describe the different routes of transmission of common STIs.
- Recognize the epidemiology of STIs in KSA.
- Communicate properly with a patient presenting with a suspected STI.
- Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage, and counsel a patient presenting with urethral or vaginal/endocervical discharge.
- Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage , and counsel a patient presenting with a genital ulcer.
- Apply the medical knowledge to properly take history, examine, order and interpret laboratory tests, manage, and counsel a patient presenting with an anogenital wart.
- Recognize latent syphilis and able to order screening tests for it.
- Recognize the common complications of common STIs.
- Understand the approach to HIV screening tests and inter

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References

- Doctor's slides and notes

Important *Notes* *Extra* *Golden*

Editing file link

الحمدلله الذي بنعمته تتم الصالحات

شكرًا لله ثم لكل من ساهم وتعاون على انجاز هذا العمل جعله اللّه عملٌ صالح تؤجرون عليه

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وشكر خاص لـ منيرة المسعد، خلود الوهيبي، أفنان المصطفى و مها العمري

Definitions:

1. (WHO): Sexual health is a state of physical, mental and social well- being in relation to sexuality.
2. Sexuality involves biological, psychological, sociological and spiritual variables.

The slides are enough, don't memorize doses.

Why ask patients about "Sex"?

1. Morbidity and mortality—STIs and HIV/AIDS
2. Symptoms of illness eg. diabetic females may lose the sensation over the clitoris as part of peripheral neuropathy.
3. Treatment side effects eg. SSRI can cause decreased libido, but if the patient has decreased libido as part of depression symptoms SSRI will improve it
4. Past may explain present problems eg. PTSD, domestic violence, abuse Hx
5. Dysfunctions and difficulties are common
6. Association with health and happiness
7. Why not?

When Should Questions Be Asked?

- 'The earlier the better' (Delay in approaching the topic communicates discomfort)
- **When?** (Determines by the presentation)
    a. HPI if her chief complaint related to it
    b. Review of Systems if her chief complaint not related to it
    c. Personal and Social History if the patient depressed or has issues

What is a sexual History? (sexual histories v.s sexual history)

Depends on:

- The patient
- The problem presented
- The amount of time available for questioning
- The context in which the patient is seen

Sexual history doesn't have to be one full history in one setting

Interviewing Versus History-taking

- How to ask questions (interviewing) is quite different from what to ask (history-taking)
- Techniques of inquiry may affect the quality and the quantity of the information gathered

Interviewing Methods

1. Ask patient's permission
2. Interviewer takes initiative
3. Language: medical/technical versus slang when you ask for sexual history use medical language and explain the terms if needed
4. Statement/Question technique
5. Privacy and Confidentiality
6. Delay sensitive questions
7. Display nonjudgmental attitude
8. Provide explanation
9. Discuss feelings
10. Promote optimistic attitude

Optimism

- Patients tend to think of themselves as not simply having a sexual problem; they also think they are less of a man or woman in the process
- **Hope is one of the most powerful treatment factors**

What to ask?

- Normal sexual cycle male and female
- **Ask about:**
  - Age, job, marital status, (1st?)
  - Children (ages) ,
  - Gyn/OB hx
  - PMHx and Pψhx
  - PSHx
  - Meds/ contraception /hormones
  - Drugs / Herbs
  - Partner hx (age, job, 1st? PHX, meds..etc)
  - Desire
  - Arousal
  - Orgasm
  - Pain

  Sexual cycle Hx
  - Sx of infection (Discharge/ spotting..etc)
  - Stressors

Sexual Dysfunction

Pattern:

1. DURATION : lifelong or acquired
2. CIRCUMSTANCES : generalization or situational differentiate between organic vs. psychological causes
3. DESCRIPTION (compare to pt previous, scale useful)
4. PATIENT'S SEX RESPONSE CYCLE (+pain)
5. PARTNER'S SEX RESPONSE CYCLE (direct v.s indirect)
6. PATIENT AND PARTNER'S REACTION
7. MOTIVATION FOR TREATMENT (not CC)

Diagnosis:

The American Psychiatric Association (APA) require that a sexual problem be recurrent or persistent and cause personal distress or interpersonal difficulty if both partners has low sequal apetite and they are happy about it then it's not a problem

Female sexual dysfunctions:

- Sexual interest/ arousal disorder
- Orgasmic disorder
- Genito-Pelvic Pain /Penetration Disorder

Male sexual dysfunctions:

- Hypoactive Sexual Desire Disorder
- Erectile Disorder
- Premature Ejaculation
- Delayed Ejaculation

Hypoactive sexual desire disorder (HSDD)

- lifelong + generalized = usually lack of knowledge
- acquired + generalized = He has it before , not now.
- acquired + situational = maybe doesn't like her partner

EXTRA

- Lifelong/generalised: There is little or no desire for sexual stimulation (with a partner or alone) and never had.
- Acquired/generalised: There was previously sexual interest in the present partner, but lacks interest in sexual activity, partnered or solitary.
- Acquired/situational: There was previously sexually interested in the present partner but now lacks sexual interest in this partner but there is desire for sexual stimulation (i.e. alone or with someone other than his present partner.)

Sexually Transmitted Infection (STI)

- More than 30 bacteria, viruses and parasites are known to be transmitted through sexual contact. 8 of these pathogens are linked to the greatest incidence of sexually transmitted disease.
- **4 are currently curable:**
  - syphilis, gonorrhoea, chlamydia and trichomoniasis.
- **4 are incurable:**
  - (viral) hepatitis B, herpes simplex virus (HSV or herpes), HIV, and human papillomavirus (HPV)
- STIs are spread predominantly by sexual contact, including vaginal, anal and oral sex.
- Some STIs can also be spread through non-sexual means such as via blood or blood products or skin to skin contact
- Many can be transmitted from mother to child during pregnancy and childbirth.
  - Eg: chlamydia, gonorrhoea, hepatitis B, HIV, HSV and syphilis
  - What doesn't transmit can also cause complications during delivery like HPV warts

Syphilis, trichomoniasis, HBV and HIV are chronic

WHO - statistics:

- More than 1 million sexually transmitted infections (STIs) are acquired every day worldwide.
- Each year, there are an estimated 357 million new infections with 1 of 4 STIs: chlamydia, gonorrhoea, syphilis and trichomoniasis. Chlamydia is the most common in KSA
- More than 500 million people are estimated to have genital infection with herpes simplex virus (HSV).
- Up to 90% of sexually transmitted infections are asymptomatic
- A person can have and spread an STI and not know it
- Complications of untreated sexually transmitted infections (STIs) include upper genital tract infections, infertility, chronic pelvic pain, cervical cancer, and chronic infection with hepatitis viruses and HIV

When you suspect STI you screen for all of them

Who is at risk?

Behavioral Factors	Risk groups
• New sex partner in past 60 days • Multiple sex partners or partner with multiple • Hx of STI or PID or sex partner • No use of protection • Engaging in unsafe sexual practices	• Young age (15 to 24 years old) • Men who have sex with mes (MSM) • History of domestic violence • HIV-positive status • Pregnant women • Admission to correctional facility or juvenile detention centre • Drug use

STI risk screen:

History:

- Genital symptoms associated with STIs (discharge, dysuria, abdominal pain, testicular pain, rashes, lesions).
- Systemic symptoms associated with STIs (fever, weight loss, lymphadenopathy).
- Personal risk factors and prevention (condom use, vaccinations).
- Patient's knowledge of increased risk of STIs.
- Have you ever had STI or been treated for one? Do you Have any concerns about STI?

Aim to quickly identify or rule out major risk factors associated with increased risk of STIs

- Are you sexually active now, or have you been sexually active? This includes oral sex or anal sex, not just vaginal sex
- Do you have any symptoms that might make you think that you have an STI? (Do you have any sores on or around your genitals? Does it hurt or burn when you pee? Have you noticed an unusual discharge from your penis, vagina or anus? Do you have pain during sex?)
- What are you doing to avoid pregnancy? (Do you or your partner use any type of birth control?)
- What are you doing to avoid STIs including HIV?
- Do you have any concerns about sexual or relationship violence or
- abuse?
- Have you or your partner(s) used injection or other drugs?
- For women also ask:
    - When was your last menstrual period?
    - When was your last Pap test?

Signs suggest PID are fever and +ve cervical motion test

There are 3 types of STIs		
Bacterial	Viral	Parasitic
• Syphilis • Chlamydia • Gonorrhoea • Chancroid • Lymphogranuloma venereum (LGV)	• Herpes • HPV (warts) • HIV • Hepatitis B • ZIKV? If someone travel to ZIKV area should avoid being pregnant for the first 3 months of returning	• Trichomonas vaginalis • Lice • Scabies

Syphilis

- Syphilis is caused by **Treponema pallidum.**
- **Symptoms and signs**
- Current or past history of lesions or rash
- A high proportion of individuals fail to recall a primary chancre
- Symptoms and signs may be modified in the presence of HIV co-infection

Stage	Clinical manifestations	Incubation period
Primary (local)	Chancre (ulcers), regional LN	3 weeks (3-90 days)
Secondary (blood spread)	Rash, fever, malaise, lymphadenopathy, mucus lesions, condyloma lata, patchy or diffuse alopecia, meningitis, headaches, uveitis, retinitis.	2-12 weeks (2 weeks to 6 months)
Latent (suppressed)	Asymptomatic	Early<1 year Late>=1 year
Tertiary (untreated late stage)		
Cardiovascular Syphilis	Aortic aneurysm, aortic regurgitation, coronary artery ostial stenosis	10-30 years
Neurosyphilis	Ranges from asymptomatic to symptomatic with headaches, vertigo, personality changes, dementia, ataxia, presence of Argyll Robertson pupil	At any time
Gumma	Tissue destruction of any organ; manifestations depend on site involved	1-46 years (most cases 15 years)

Lab tests:

- Dark-field microscopy - no longer used (Do Serology !)

Non-treponemal	Treponemal-specific
Non specific (false positive)	Specific
Can be quantified Reported in titer (good for FU) High titer = active infection | Low titer = past infection	Qualitative only /reported as "reactive" or "nonreactive" (Life long) Can't be quantified, if +ve then it going to be +ve lifelong
Useful in treatment monitoring - Rapid plasma reagin (RPR) - Venereal Disease Research Laboratory (VDRL) - Toluidine Red Unheated Serum Test (TRUST)	- Fluorescent treponemal antibody absorption (FTA-ABS) - Microhemagglutination test for antibodies to T. pallidum (MHA-TP) - T. pallidum particle agglutination assay (TPPA) - T. pallidum enzyme immunoassay (TPEIA) - Chemiluminescence immunoassay (CIA)

We order both to be able to diagnose

Treatment:

- Penicillin G, If allergic (Doxycycline /Ceftriaxone)
- Duration and dose depends on stage
- All sexual contacts of infectious syphilis must be located, tested and treated. Serial serology Follow up

Chlamydia and Gonorrhea

- Infections with *Chlamydia trachomatis* and *Neisseria gonorrhoeae* are very common.
- In the United States, they are the two most commonly reported communicable diseases.
- When you treat for one of them treat for the other + treat the partner as well

Presentations:

Females	Males
Symptoms and signs	
- Most often asymptomatic - **Cervicitis** - **Vaginal discharge** - Dysuria - Lower abdominal pain - Abnormal vaginal bleeding - Dyspareunia - Conjunctivitis - Proctitis (commonly asymptomatic)	- Often asymptomatic - Urethral discharge - Urethritis - Urethral itch - Dysuria - Testicular pain - Conjunctivitis - Proctitis (commonly asymptomatic)
Major sequelae	
- Pelvic inflammatory disease - Ectopic pregnancy - infertility - Chronic pelvic pain - Reactive Arthritis	- Epididymo-orchitis - Reactive Arthritis

Lab test:

- Nucleic acid amplification testing (NAAT)
  - NAAT can also be performed on endocervical (for women) and urethral swab (for men)
  - Self collected vaginal or urine (compliance)
- Vaginal swabs for women
- First-catch urine for men

Treatment:

Empirical co-treatment when a diagnosis of N. gonorrhoeae is made without waiting for test results of C. trachomatis due to the significant probability of co-infection (20–42%)
All partners who have had sexual contact with the index case within 60 days prior should be tested and empirically treated regardless of clinical findings and without waiting for test

- **Gonorrhea**
  - Preferred: Cefixime 800 mg PO as a single dose + azithromycin 1g PO as a single dose
  - Alternate: Ceftriaxone 250 mg IM as a single dose + azithromycin 1 g PO as a single dose
- **Chlamydia**
  - Preferred: Azithromycin 1 g PO as a single dose
  - Alternate: Doxycycline 100 mg PO BID for 7 days

The aim of treating STI is to prevent transmission

Genital Herpes Simplex (HSV)

- Herpes simplex virus (HSV) types 1 and 2
- Most cases of recurrent genital herpes are caused by HSV-2
- Mean recurrence rates in persons with genital HSV-2 (4%) infection than in those with HSV-1 (1%)
- The incidence and prevalence of HSV-1 genital infection is increasing globally
- HSV-1 accounts for 20% of cases, HSV-2 for 80%.(Germany)
- It is estimated that the majority of genital herpes infections are transmitted by persons unaware that they have the infection, or are asymptomatic when transmission occur

- HSV-1 has more intense presentation and less recurrence rate.
- HSV-2 has less intense presentation and higher recurrence rate.

Presentation:

A diagnostic lesion is a cluster of vesicles on an erythematous background

Primary infection:

- Systemic sx (67%) "flu like Sx"
- Local pain and itching (98%)
- Dysuria (63%)
- Tender lymphadenopathy (80%)

Recurrence:

- Typical lesions, less severe than primary infections.
- Duration of lesions is shorter (10 versus 19 days)
- Systemic symptoms in 5-12%.
- Prodromal symptoms in 43-53%, for an average of 1.2-1.5 days.

Lab tests:

- Culture is sensitive (70% from ulcers, 94% from vesicles) and permits identification of HSV type
- PCR is four times more sensitive than HSV culture and is 100% specific

Management:

- Counselling is an important component in management. Genital HSV infection is not curable
- Transmission of genital herpes is decreased by the following:
  - Avoidance of contacts with lesions during obvious periods of viral shedding (prodrome to re-epithelialization) from lesions.
  - Condom use (50%) not enough
  - Suppressive antiviral therapy, which reduces recurrent lesions, asymptomatic viral shedding and transmission.

No-Treatment	Episodic therapy	Suppressive therapy
- When recurrences are both mild and infrequent - In cases where sexual transmission is not a concern	- For patients with infrequent (less than 6-9 outbreaks per year) - Treatment should be started as soon as possible (prodromal or within hours of a lesion)	- For patients with more than 9 symptomatic outbreaks a year - In those who are concerned with disease transmission

Human Papillomavirus (HPV)

- **HPV are two types on the basis of their oncogenic potential:**
  - Low risk varieties, such as HPV6 and HPV11, give rise to condylomata acuminata (genital warts)
  - High-risk varieties, such as HPV16 and HPV18, cause neoplasia. Not the only causes for neoplasia but the most common
- **Burden of HPV related cancers:**
  - Cancer of the cervix the second most common cancer among women worldwide
  - Cervical cancer ranks as the 9th leading cause of female cancer in Saudi Arabia

HPV Vaccines:

- Bivalent vaccine (Cervarix) (HPV types 16 and 18) - responsible for more than 65% of cervical cancers
- Quadrivalent vaccine (Gardasil) (HPV types 6 ,11 90% warts) +,(16, 18)
- 9-valent vaccine (HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58) an additional 15% of cervical cancers.
- For girls and boys vaccines be given at 11 to 12 years of age
- Not licensed or recommended for persons **older than 26 years.**

Incidence of cervical cancer:

- Saudi Arabia : 1.3%
- Western Asia: 3.6%
- World Crude incidence:15.8%

Annual number of new cancer cases:

- Saudi Arabia : 152
- Western Asia: 3931
- World: 529828

What do we do?

- Interpret guidelines
- Offer information
- Prescribe and administer vaccine if requested

HIV

- HIV-positive persons who receive timely and appropriate treatment, with good compliance, now have nearly the same life expectancy as HIV negative persons
- All patients presenting to a physician for the diagnosis or treatment of a sexually transmitted disease should be tested for HIV.
- HIV testing requires the patient's consent
- Higher viral load more risk of transmission-- unlikely if the HIV-positive individual has a consistently low viral count (less than 50 copies/mL)
- Receptive partner in unprotected anal intercourse - highest risk
- The risk of HIV transmission is elevated X 3 to 10 by presence of other STI

When to test?

- Serologic testing is recommended when there is a high index of suspicion
- Persons may also present with specific opportunistic infections or other conditions indicative of underlying immunosuppression

Diagnosis of HIV:

ELISA	Screening Antibodies (2-3wks seroconversion)
PCR	Measures the viral load (acute exposure before seroconversion)
Western Blot	Confirmatory test (after 2 +ve ELISA)

Trichomonas

- Infection with the flagellated protozoan Trichomonas vaginalis.
- Women are affected more often than men
- Men:
  - Urethritis, epididymitis, or prostatitis
  - Mild pruritus or burning in the penis after sexual intercourse
- Women:
  - Vaginal discharge diffuse, thin, ill-smelling, yellowish-green
  - Symptoms worse during menstruation, post coital spotting
- 70–85% have minimal or no symptoms
- Untreated asymptomatic infection can persist for months or years

On examination:

- Erythema of the vulva and vaginal mucosa , discharge 10-30% of symptomatic women
- Punctate hemorrhages on the cervix (ie, strawberry cervix) in 2%

Lab test:

- Microscopy is often the first step(positive no need for further testing)
- (if negative) ,>>>then nucleic acid amplification tests (NAAT) if not available then >>>rapid diagnostic kits, or culture
- Organisms remain motile for 10 to 20 minutes after collection of the sample

Treatment:

- 5-nitroimidazole drugs (**Metronidazole** or **Tinidazole**) are the only class of drugs that provide curative therapy of trichomoniasis.
- **Allergy** — other ABX cure rates are low (≤50%)
- Consider referral for desensitization rather than using an alternative class of drugs

In the End.....

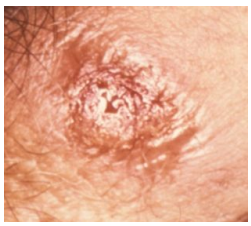
- Asking patients about their sexual health is part of your medical assessment
- Screen patients for sexual issues and STI
- When suspecting risk of STI test for .....
- Always treat partner/ sexual contacts

Questions

1.A 28-year-old woman, gravida 2, para 1, at 14 weeks' gestation, comes to the physician with a 3-day history of abnormal vaginal discharge. She has not had fever, chills, or abdominal pain. One week ago, her 2-year-old daughter had a urinary tract infection that quickly resolved after antibiotic therapy. The patient reports that she is sexually active with one male partner and they do not use condoms. Vital signs are within normal limits. Pelvic examination shows an inflamed and friable cervix. There is mucopurulent, foul-smelling discharge from the cervical os. There is no uterine or cervical motion tenderness. Vaginal pH measurement shows a pH of 3.5. Which of the following is the most appropriate initial step in management?

A. Wet mount preparation
B. Amine test
C. Urine analysis and culture
D. Nucleic acid amplification test

2. A 17-year-old boy comes to the physician 1 week after noticing a lesion on his penis. There is no history of itching or pain associated with the lesion. He is sexually active with two female partners and uses condoms inconsistently. Five weeks ago, he returned from a trip to the Caribbean with some of his football teammates. He takes no medications. He has recently started an intense exercise program. His vital signs are within normal limits. Physical examination shows multiple enlarged, non tender lymph nodes in the inguinal area bilaterally. A photograph of the lesion is shown. Which of the following is the most likely pathogen?



A. Herpes simplex virus type 2
B. Treponema pallidum
C. Chlamydia trachomatis
D. Neisseria gonorrhea

Answers:
1.D
2.B