SEXUALLY TRANSMITTED INFECTIONS IN A PRIMARY CARE SETTING

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How Often are STIs seen in General Practice?
Australian Study of Health and Relationships
- 20% men and 17% women previous STI
- 55% managed by a GP

Victorian GPs
- 19% managed an STI weekly, 36% monthly (46% less frequently)
UK
- Over 90% of those at high risk for STIs had never attended a Sexual Health Clinic

Could this be an STI?
Discharge
Intermenstrual bleeding
Dysuria
Genital Ulcers
Rashes
Arthritis

The sexual history made easy

Explain
- What you need to ask and why
Reassure
- About confidentiality and privacy
Respect
- Patients rights to tests and treatment
Don’t Judge
- Don’t assign blame

Sexual history taking 1

- Physical symptoms
- Sexual behaviour
  - regular/casual sexual partner contact
  - last sex contact with other partner/s
  - no. of sexual partners
  - gender of sexual partner/s
  - type of sexual contact
  - condom use and consistency of use
Risk factors for STIs
- Age 15-30
- History of unprotected sex
- Pregnancy = unprotected intercourse
- Multiple partners/serial monogamy/ partner with risky lifestyle
- History of previous STIs
- Drug and alcohol use
- Sex with partner from high risk country

Investigations - males
- First void urine
  - Chlamydia and gonorrhoea PCR/LCR
  - Threads = Urethritis
- Gonococcal Cultures:
  - Urethra, throat and rectum
  - Charcoal swab
- Chlamydia PCR:
  - FVU = Rectal if indicated
- Serology for syphilis, Hep B & HIV

Most Male Screening can be done without any urethral swabs

Investigations - females
- Cervical
  - chlamydia and gonococcal PCR
  - gonococcal culture
- First Void Urine
  - Chlamydia and Gonorrhoea PCR
  - Not as sensitive as in men
- Throat and rectal swabs
  - Chlamydia PCR and gonococcal culture
  - As indicated
- HVS for wet film, Gram stain +/- culture
- Serology: syphilis, HepB, HIV, (Herpes)

Vaginal Discharge
- Infection
  - Thrush, BV, TV
  - Gonorrhoea, Chlamydia, herpes
- Hormonal/physiological
  - Pregnancy
  - Pill
- Foreign body
  - Chemical
  - Tampons, condoms
- Dermatoses
Bacterial Vaginosis
- Not an STI though associated with sexual activity
- Pearly-grey vaginal discharge with "fishy" odour
- pH > 4.5

Treatment - Metronidazole Flagyl 400mgs bd for one week.
(stat dose 2g)

Thrush
- Not an STI
- Itchy, non-offensive, Curdy-white discharge
- pH 4.5
Treatment
- Imidazoles (eg clotrimazole)
- Fluconazole
- Supression

Trichomonas Vaginalis
- Usually Sexually Acquired
- Frothy, Itchy off white discharge
- pH > 4.5
- Protozoa visible on wet-prep.

Treatment
- Metronidazole 2g po stat

Genital Chlamydia
- 10 times more common than gonorrhoea.
- Prevalence varies widely
  - 20-30% in sex workers and those attending STI clinics
  - 8-20% adolescent health centres
  - 10% military recruits
  - 3-9% Family Planning clinics
  - 6% Antenatal clinics

Genital Chlamydia
- Notifiable infection in Australia
- Increasing - 20,026 in 2001 to 30,025 by end of Sept 2004
- Most infections are asymptomatic
- In men - urethral discharge, dysuria, epididymitis (80% of cases in age <35 years are due to Chlamydia)
- Highest rates of asymptomatic infection are in women under 30 years of age

Genital Chlamydia
- In women - discharge, irregular bleeding, pain with sex, pelvic infection and tubal damage
- Long term problems in women include infertility and increased risk of ectopic pregnancy
Tests for Chlamydia

- NAATs (PCR, LCR)
- FVU, HVS, Cervical swab
- Sensitivity >90%, specificity close to 100%
- Serological testing is of no use in diagnosis of genital infections

Targeted Screening for Chlamydia

- Opportunistic
- At risk groups include
  - Those with symptoms
  - Those with another STI
  - Partners of those with symptoms
  - Recent change of sexual partner
  - Multiple sexual partners
  - Under 30s

Gonorrhoea

- Higher incidence in MSM, O.S. contact, ATSIs
- Symptoms may be absent or non-specific
- Discharge when present can be purulent or nonspecific as for chlamydial infection
- May also present as PID or Bartholins Abscess

Gonorrhoea: diagnosis

- Symptoms or targeted screening
- Gram stain only reliable for urethritis when discharge present
- Culture - all sites at risk
- DNA-based tests (combined with Chlamydia) useful but do not give antibiotic sensitivity

Gonorrhoea

- Swabs
  - charcoal medium for culture
  - plain swab for PCR
- Sites sampled:
  - depend upon sexual history
  - cervix, urethra, anus, pharynx
- Resistance
  - Both penicillin & ciprofloxacin resistant strains occur: check with local Sexual Health Service what local antibiotic sensitivities are
  - Recommended treatment in homosexually active males is Ceftriaxone 250mgs IM
  - Treat for Chlamydia as well - 30% will have mixed infections
  - Notifiable disease - contact tracing & follow up necessary to confirm cure
Herpes
- Commonest cause of genital ulcers
- Primary episode lasts 7-14 days
- Recurrent episodes usually shorter and less severe
- Diagnosis: swab from blister fluid or ulcer base
- PCR test is gold standard for detecting HSV 1 and 2
- 70% of cases in those under 20s are due to HSV 1
- Atypical lesions common – beware of recurring skin splits, red areas, hypersensitive skin
- HSV: type-specific serology
  - EIA tests now available
  - Limited reliability in low-risk people
  - Seroconversion can take up to 6 months
  - Doesn’t prove lesions are herpes
  - Most useful for long-term partners, especially when female is asymptomatic and planning pregnancy
- HSV: treatment
  - First episodes: treat urgently
  - Recurrent episodes:
    - non-specific measures (analgesia, saline)
    - most don’t require antivirals
    - suppression versus episodic treatment
  - Suppressive regimes
    - valaciclovir 500 mg od (500 mg bd if >10/yr)
    - famciclovir 250 mg bd
- Viral shedding
  - Individuals infected with HSV, shed the virus from time to time and consequently are infectious to their sexual partners
  - Viral shedding occurs from obvious lesions (eg. blisters or ulcers) as well as from apparently intact skin and mucous membranes

Genital Warts
- Over 200 types of HPV-50 types on genital skin
- Most common viral STI
- Most sexually acquired but occurred years before clinical lesions appear in many cases
- Concern is exposure to oncocogenic HPV strains
- HPV: diagnosis & clinical spectrum
  - 1% Clinical warts
  - 24% subclinical- Pap/Colp
  - 60% latent
  - DNA testing-
    - 80% +ve in 20s
    - 10% +ve in 40s
  - Serology for research only
Genital Warts

- Offer screening for other STIs - 30% will have another STI
- Pap smear should be offered to female patients diagnosed with genital warts
- Advice re transmission - >50% partners are asymptomatic

Genital Warts- Treatment

- Chemical
  - Podophyllotoxin (45-82%)
  - Trichloroacetic Acid (50-100%)
- Physical
  - Cryotherapy (60-97%)
  - Electrocautery (35-94%)
  - Surgical excision (93%)
  - Laser (60-100%)
- Immune modulator
  - Imiquimod (37-85%)

HPV DNA Testing

- Not useful as routine screening: carriage of HPV is transient with median range of 8-10 months
- Persistence of oncogenic HPV is associated with increased risk of cervical cancer
- Persistent HPV 16 at age >35 has 116x risk of CIN3 or later cervical cancer
- Negative HPV DNA and Pap test = low risk of cervical cancer

HPV vaccines

- Vaccination against oncogenic strains of HPV before onset of sexual activity
- Not currently considered therapeutic
- At least 10 subtypes of HPV cause cervical cancer - multivalent vaccines needed
- Vaccines are more immunogenic than the natural virus
- Protection will last for at least 10 years
- Vaccination of teenagers now will not impact on the incidence of cervical cancer or CIN women >30 before 2020

What vaccines are available?

- Gardasil; quadrivalent covers low risk types 6 & 11 and high risk types 16 & 18
  - Approved for use in females aged 9 – 26 years and males aged 9 – 15 years.
- Cervarix; bivalent covers high risk types 16 & 18
  - Approved for use in females aged 10 - 45 years

Molluscum Contagiosum

- Pox virus
- Pearly umbilicated lesions
- Spread by direct skin to skin contact
- Autoinoculation by skin abrasions - don’t shave pubic hair
- Treatments - phenol, cryotherapy, imiquimod
Parasites

- Scabies
  - Mite infestation
  - Spares face and scalp
  - Itch worse at night
  - Treatment: Benzyl benzoate or permethrin
  - Repeat one week
  - Treat sexual partner
  - Hot wash clothes/ bed linen

Parasites

- Pubic lice
  - Infests pubic area, underarms, eyebrows and sometimes body hair in males
  - Treatment: permethrin 5% cream to all coarse hair bearing areas
  - Petroleum jelly to eyebrows
  - Repeat in one week
  - Treat sexual partner
  - Hot wash clothes and bedding

Syphilis: Treponema Pallidum

- Site of Inoculation (10-90 days post exposure)
- Lasts for 3 - 6 weeks
- Painless
- Serology may be negative

Syphilis: clinical spectrum (primary)

- 7-10 weeks
- Systemic illness
- Fever, headache, rash, lymphadenopathy
- Tests positive

Syphilis: clinical spectrum (secondary)

- 7-10 weeks
- Systemic illness
- Fever, headache, rash, lymphadenopathy
- Tests positive

Syphilis Serology

Non specific tests - RPR / VRDL
- will take 6 weeks to become reactive
- monitor activity and response to treatment.
- False +ve occur to nonspecific tests

Specific tests – FTA-abs, EIA and TPPA
- Become positive from 3-5 weeks
- remain +ve for life despite treatment.
- patients with other treponemal infection will have +ve tests

Interpretation of a positive test for Syphilis can be difficult - seek advice from Sexual Health Physician
**Syphilis in pregnancy**
- 66% of women with active infection will transmit syphilis to foetus
- Low prevalence of active syphilis in urban Australia - antenatal screening picks up mainly old latent infections
- 10% of women with latent syphilis can infect foetus
- Syphilis can cause miscarriage, preterm labour, still birth, foetal abnormality

**Syphilis: management**
- Patient education/contact tracing
- Procaine penicillin 1g IMI 10-15 days
  - higher doses, longer courses with latent or complicated infection
- Benzathine penicillin 1.8 g IMI for 1 to 3 weeks
  - especially if follow-up uncertain
- Doxycycline 300 mg/day for 15-30 days orally
  - alternative if penicillin allergy and reliable

**Hepatitis B**
- Transmission
  - Blood
  - Sexual
  - Contact with other body fluids such as saliva, breast milk and vertical transmission at birth
- Incubation period 1-6 months
- When testing - ask for either “previous Hep B inf” (core antibody and if +ve surface antigen) or “post-vaccination immunity” (surface antibody)

**HIV Prevalence**
- In Australia total HIV numbers are
  - HIV 20,925 cases
  - AIDS 8,558 cases
- New HIV per year around 120 cases
- More than half people with HIV/AIDS in Australia live in NSW

**Estimated Risk of HIV transmission by HIV exposure**

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Risk per exposure</th>
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<tbody>
<tr>
<td>Receptive anal sex</td>
<td>1:125 to 1:31</td>
</tr>
<tr>
<td>Receptive vaginal sex</td>
<td>1:2000 to 1:667</td>
</tr>
<tr>
<td>Insertive anal/vaginal</td>
<td>1:333 to 1:111</td>
</tr>
<tr>
<td>Needlestick injury</td>
<td>1:313</td>
</tr>
<tr>
<td>Contaminated IVUD</td>
<td>1:149</td>
</tr>
<tr>
<td>Vertical</td>
<td>1:50 to 1:2</td>
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</tbody>
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Condoms can prevent nearly all HIV transmission
PEP (non-occupational HIV exposure)

- Assess level of risk of sexual contact
- Provide counselling
- STI screen
- HIV medication for 4 weeks - 2 drugs if low risk, 3 drugs if high risk
- Monitor side effects & blood tests-EUC, LFT, FBC, amylase
- HIV testing at 8 weeks & 6 months

HIV: current major issues

- Adherence to therapy/resistance
- Long-term side-effects
- Drug interactions
- Increasing unsafe sex
- STDs among gay men
- Reduced infectivity on therapy
- Post-exposure prophylaxis

HIV in pregnancy

- Vertical transmission can be prevented
- Prevention requires early detection of HIV infection
- All women should be offered HIV testing after appropriate risk assessment at the first antenatal visit
- Is one HIV test in pregnancy enough ???

HIV in pregnancy

- Treatment:
  - Aim to achieve undetectable viral load by end of 2nd trimester
  - Higher viral load = increase risk of transmission
  - Use of antiretroviral and elective Caesarean section has reduced transmission to <2%-expected rate in untreated women 20-30%
  - Women with immeasurable viral load on therapy during pregnancy are now having vaginal deliveries

A couple of case studies....

- Jan aged 28 and 24 weeks pregnant. Is concerned because her husband has had an increase in the frequency of his episodes of genital herpes. Together for 5 years and he has had HSV 2 for over 10 years. Normally he has 1-2 minor episodes per year but is having attacks every 6 weeks at present. She has heard that herpes can be harmful to the baby.

How do we manage Jan?

- We need to determine if Jan has been exposed to HSV infection. So-
  - Take full medical and sexual history
  - Has she ever had oral HSV infection (cold sores)?
  - Has she ever had any genital symptoms suggestive of HSV - itching, burning, cuts or tears, recurrent thrush
What investigations should we perform?
- Clinical examination
- Offer STI screening if indicated from history
- Discuss Herpes type specific serology to assess if has been exposed to herpes simplex type 1 or 2 in the past

Results- HSV serology
- HSV 1 Ig M  negative
- HSV 1 Ig G  positive
- HSV 2 Ig M  negative
- HSV 2 Ig G  negative
- Indicates past exposure to HSV 1, but no exposure to HSV 2

Management.
- Jan is at risk to exposure to HSV 2 in pregnancy hence we would advise:
  - Suppressive antiviral therapy for partner
  - Use condoms for all sexual intercourse
  - No sexual contact if he has symptoms
  - Consider avoiding vaginal intercourse during last trimester of pregnancy

Emma - aged 26
- Emma is a new patient to the practice. She is very upset as her partner has told her that he had unprotected sex with a sex worker on a business trip to Thailand 8 weeks ago. He is asymptomatic, but his best friend had told him that he should see his doctor as STIs can be silent. His doctor has found that he has chlamydia. What should she do?

Plan of action.
- Talk to Emma about risk of infection - have they had sex since his return home?
- Offer her an STI screen.
- Best specimen for chlamydia detection is cervical swab but first pass urine is also appropriate if she declines speculum examination
- Offer check for gonococcus as well

Plan of action
- Discuss having serology for HepB, HIV and syphilis in view of high risk partner contact
- When should these tests be done?
- What treatment should Emma have?
- Offer access to counsellor to discuss relationship issues
Conclusion

- Sex Happens - take sexual histories
- Screen people at risk - most won’t have symptoms

Resources

- FPNSW 1300 372 372  www.fpnsw.org.au
- Sexual Health Hotline  1800 451 624
- www.whytest.org  MSM
- www.acon.org.au  1800 063 2088