### Sexually Transmitted Infections (STIs) – organisms which cause ulcers

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<tr>
<th>Organism</th>
<th>Disease</th>
<th>Comment</th>
<th>Diagnosis</th>
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| Herpes Simplex Virus types 1 & 2 (HSV-1,  | HSV-1: transmitted via saliva causing oropharyngeal infection in children. HSV-2: sexually transmitted causing genital herpes. | • HSV-2 is usually asymptomatic.  
• Consists of vesicles that soon break down to form painful shallow ulcers.  
• Infection can be transmitted from mother to infant during delivery. | • Detection of HSV DNA by vesicle fluid or ulcer swab.  
• Immunofluorescence. |
| Chlamydia trachomatis (obligate intracellular parasite) | L1, L2, L3 serotypes (lymphogranuloma venereum) | • Symptomatic infection is more common in men.  
• Ulcerating papule at the site of inoculation accompanied by fever, headache and myalgia.  
• Causes inguinial lymph node enlargement (inguinal buboes). | • Gram stain: gram-negative rods and chains.  
• Culture: rich medium. |
| Haemophilus ducreyi                        | Chancre                                      | • Painful non-indurated genital ulcers and local lymphadenitis.          | • Gram stain: gram negative rods.  
• Donovan bodies appear as clusters of blue- or black-stained organisms in the cytoplasm of mononuclear cells. |
| Calymmatobacterium granulomatis           | Donovanosis                                  | • Characterized by nodules, almost always on the genitilia, which erode to form granulomatous ulcers that bleed readily on contact. | • Gram stain: gram negative rods.  
• Culture: rich medium. |
| Treponema pallidum                        | Syphilis                                     | • Chancre (painless ulcers).  
• Sexually transmitted and from mother to fetus via transplacental infection. | • Serologic test.  
• Enzyme-linked immunosorbent assay. |

### Sexually Transmitted Infections (STIs) – organisms which cause discharge

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| Neisseria gonorrhoea               | Gonorrhea                                    | • Women are usually asymptomatic.  
• Site of entry: vagina-urethral mucosa of penis-throat-rectal mucosa.  
• Causes dysuria & urethral discharge in men – vaginal discharge in females (risk of PID & infertility).  
• The discharge is: thick, yellowish-greenish, purulent and abundant. | • Gram stain: gram negative intracellular diplococci.  
• Culture: chocolate blood agar.  
• Nucleic acid-based approaches. |
| Chlamydia trachomatis (obligate intracellular parasite: elementary body adapted for extracellular survival and reticulate body adapted for intracellular multiplication) | Serotypes D-K (non-gonococcal urethritis) | • Sexually transmitted or during childbirth (resulting in conjunctivitis or pneumonia in infant)  
• Women usually asymptomatic.  
• Causes urethritis, epididymitis, proctitis in men and urethritis, cervicitis, salpingitis in women.  
• The discharge is: mucoid, scarce and usually present in the morning. | • Culture.  
• Direct immunofluorescence.  
• Nucleic acid amplification test. |
| Mycoplasma (M. hominis – M. genitalium – Ureaplasma urealyticus) | Non-gonococcal urethritis | • Colonize the genital tracts of healthy sexually active men and women. | • Culture: fried-egg appearance. |
| Trichomonas vaginalis (protozoan parasite) | Trichomoniasis | • Sexually transmitted, inhabiting vagina in women and urethra in men.  
• Frothy, profuse, foul-smelling vaginal discharge with bubbles. | • Microscopic examination shows actively motile trophozoites.  
• Culture.  
• Nucleic acid detection. |
| Candida Albicans                   | Candidiasis                                   | • Vaginitis with cottage-cheese vaginal discharge accompanied by urethritis and dysuria. | • Microscope examination: clusters of thread-like branching monilia organisms.  
• Culture. |

### Other concerns

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| Anaerobes and Gardnerella vaginalis | Bacterial vaginosis                          | • Characterized by at least three of the following signs and symptoms:  
✓ Excessive malodorous vaginal discharge.  
✓ Vaginal pH > 4.5  
✓ Presence of clue cells.  
✓ A fishy amine-like odour when adding potassium hydroxide.  
• The discharge is: milky or creamy. | • Culture: human blood agar. |
| Human Papilloma Virus (HPV)        | Genital warts and cervical cancer in females | • High-risk types for cervical cancer: 16,18  
• Low-risk types: 6,11 | • |