

CHAPTER 23
INFECTIONS OF THE
GENITOURINARY SYSTEM

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URINARY TRACT INFECTIONS

- ◆ The presence of pathogens or inflammatory cells in the urine is an indication of a urinary tract infection
- ◆ UTIs are very serious in hospital settings and are usually related to indwelling catheters

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URINARY TRACT INFECTIONS

- ◆ UTIs are usually caused by bacteria
- ◆ Infection in the urethra is called urethritis; in the bladder, cystitis; in the prostate, prostatitis; and in the kidney, nephritis

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BACTERIAL UTIs

- ◆ Bacterial UTIs are seen more in women than in men because of the difference in the lengths of the urethra
- ◆ *Escherichia coli* is responsible for the majority of UTIs and is the most potent of all pathogens that cause UTIs
- ◆ Bacterial UTIs are routinely treated with antibiotics, but resistance is now a serious issue

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INFECTIONS OF THE REPRODUCTIVE SYSTEM

- ◆ Most infections of the reproductive system are sexually transmitted infections (STIs)
- ◆ A wide variety of pathogens can cause STIs and infection can become systemic
- ◆ Women are more affected than men by STIs because of anatomical differences in the reproductive systems
- ◆ STIs can be passed to foetuses and newborns

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BACTERIAL INFECTIONS OF THE REPRODUCTIVE SYSTEM

- ◆ Bacterial infections of the reproductive system are usually sexually transmitted
- ◆ Bacterial STIs can cause ulcers, sexually transmitted urethritis, epididymitis, cervicitis, vaginitis, and pelvic inflammatory disease

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BACTERIAL INFECTIONS OF THE REPRODUCTIVE SYSTEM

- ◆ The most common bacterial STIs are syphilis (caused by *Treponema pallidum*), gonorrhea (*Neisseria gonorrhoeae*), and non-gonococcal urethritis (*Chlamydia trachomatis*)
- ◆ *Treponema pallidum* is an exclusively human pathogen that does not produce virulence factors

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BACTERIAL INFECTIONS OF THE REPRODUCTIVE SYSTEM

- ◆ Syphilis has distinct clinical stages: primary, secondary, latent, and tertiary (which is systemic and can affect the nervous system)
- ◆ Gonorrhea is a public health problem with the reservoir being asymptomatic carriers

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BACTERIAL INFECTIONS OF THE REPRODUCTIVE SYSTEM

- ◆ Infection by *Neisseria gonorrhoeae* has three stages: attachment and invasion of the epithelia, survival in the submucosa, and dissemination to reproductive glands (and sometimes blood)
- ◆ *Chlamydia* is a unique form of bacteria: it is an obligate intracellular bacteria with a very small genome

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VIRAL INFECTIONS OF THE GENITOURINARY SYSTEM

- ◆ Several viruses cause STIs, including HIV, HSV 2 (herpes simplex virus 2), and HPV (human papillomavirus)
- ◆ Humans seem to be the only reservoir for HSV 2, and many people infected with genital herpes are asymptomatic but still infectious

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VIRAL INFECTIONS OF THE GENITOURINARY SYSTEM

- ◆ There is no cure for genital herpes infection and transmission to newborns causes a serious infection that can be fatal
- ◆ Human papillomavirus (HPV) can cause genital warts and is also the primary cause of cervical cancer

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VIRAL INFECTIONS OF THE GENITOURINARY SYSTEM

- ◆ The incidence of HPV infection is rising, and it is estimated that as many as 60% of women in the United States are infected with one or another of the genotypes of HPV
- ◆ A vaccine is now available for the prevention of HPV infection

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FUNGAL INFECTIONS OF THE GENITOURINARY SYSTEM

- ◆ The most prominent form of fungal infection of the genitourinary tract is vaginal candidiasis caused by *Candida albicans*
- ◆ Indwelling catheters and the overuse of antibiotics provide additional opportunities for opportunistic *Candida* infection

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