CHAPTER 23
INFECTIONS OF THE GENITOURINARY SYSTEM

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

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
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

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

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
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

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

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
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.

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.

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.
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