Herpes Zoster

Kim M. O’Connor and Douglas S. Paauw

Herpes zoster is a common condition that significantly affects health-related quality of life. Most cases occur in immunocompetent individuals older than 60 years; however, immunosuppressed patients are at particularly high risk. Post-herpetic neuralgia is the most common serious complication of herpes zoster, and is much more common in the very elderly. Vaccination with the zoster vaccine is recommended for most people older than 60, and reduces the incidence of herpes zoster and the occurrence of post-herpetic neuralgia.

Clostridium difficile Infection

Christopher L. Knight and Christina M. Surawicz

Clostridium difficile is emerging as a common cause of infectious diarrhea. Incidence has increased dramatically since 2000, associated with a new strain that features both increased toxin production and increased resistance to antibiotics. For patients with mild to moderate disease, oral metronidazole is usually the first choice of treatment, and those with severe disease should be treated with vancomycin, with additional intravenous metronidazole in some cases. Fecal microbiota transplantation is a potentially promising therapy for patients with multiple recurrences of C difficile infection. Prevention of nosocomial transmission is crucial to reducing disease outbreaks in health care settings.

Pertussis

Tara B. Spector and Eileen K. Maziarz

Pertussis, or whooping cough, is an upper respiratory tract infection caused by Bordetella pertussis. It has long been a concern in pediatric populations, leading to aggressive vaccination strategies to help decrease pediatric disease. In recent years, recognition of pertussis infection in adult populations has increased, leading to more frequent diagnosis and recommendations for booster immunizations in the adult population. Early recognition and treatment as well as vaccination will help reduce the current increase in this disease.

Multidrug-resistant Tuberculosis

John B. Lynch

Multidrug-resistant tuberculosis (MDR-TB) threatens to become the dominant form of tuberculosis in many parts of the world because of decades of inappropriate treatment on a global scale. Infection with MDR-TB is
associated with poor outcomes because of delays in treatment and the need for complex, toxic, and long medication regimens. Most cases are undetected because of technological and economic barriers to diagnosing tuberculosis and the availability of assays to test for drug resistance. Experience in treating MDR-TB is scarce. Tuberculosis was once curable, but could become a potentially untreatable infectious disease unless efforts are made to control it.

Infections in Transplant Patients 581
Genevieve L. Pagalilauan and Ajit P. Limaye

Recipients of solid organ transplants (SOT) need primary care providers (PCPs) who are familiar with their unique needs and understand the lifelong infectious risks faced by SOT patients because of their need for lifelong immunosuppressive medications. SOT recipients can present with atypical and muted manifestations of infections, for which the knowledgeable PCP will initiate a comprehensive evaluation. The goal of this article is to familiarize PCPs with the infectious challenges facing SOT patients. General concepts are reviewed, and a series of patient cases described that illustrate the specific learning points based on common presenting clinical symptoms.

Methicillin-Resistant Staphylococcus aureus Infections 601
Paul S. Pottinger

Methicillin-resistant Staphylococcus aureus (MRSA) is an important pathogen that has exploded into clinical prominence in a short period. New medications are available for the treatment of MRSA infections, each with its own pitfalls and caveats. However, the resistance profile of the bacteria is becoming more complex. Recent guidelines from the Infectious Diseases Society of America provide an evidence-based framework for the management of MRSA infections. This article provides additional practical advice on approaches to MRSA, including the detection, prevention, and management of a variety of its common presentations.

Influenza 621
Angelena M. Labella and Susan E. Merel

Influenza is a common virus whose ability to change its genetic makeup allows for disease of pandemic proportion. This article summarizes the different strains of influenza circulating in the United States for the past century, the diagnosis and treatment of influenza, as well as the different ways to prevent disease. This information will be of value to clinicians caring for patients both in the hospital and in the community.

Pneumococcus 647
Samuel Y. Ash and John V.L. Sheffield

Pneumococcus is one of the most common bacterial pathogens encountered in medicine. This article summarizes the risk factors, pathogenesis, treatment, and prevention of the spectrum of disease caused by pneumococcus with particular emphasis on antibiotic resistance as well as immunization. This information is useful for physicians caring for patients
both as inpatients and outpatients as well as for those concerned with public health and disease prevention.

Complications of Antibiotic Therapy

Jenny Wright and Douglas S. Paauw

Antibiotics have greatly changed the practice of medicine for the better. Many infections commonly treated in the outpatient setting with antibiotics (eg, urinary tract infections, streptococcal pharyngitis), which previously caused significant morbidity and mortality, are now typically benign. However, with antibiotic therapy come side effects, ranging in severity from mild nausea to life-threatening cytopenias. This article highlights important complications of antibiotic therapy that may be encountered by outpatient providers. Side effects by system are discussed, and a few important drug-specific complications and important drug-drug interactions highlighted.

Enterohemorrhagic Escherichia coli Infections and the Hemolytic-Uremic Syndrome

Andrea V. Page and W. Conrad Liles

Enterohemorrhagic Escherichia coli (EHEC; Shiga toxin/verotoxin-producing E. coli) can cause bloody diarrhea and the hemolytic-uremic syndrome (HUS), typically following consumption of contaminated food (including ground beef, leafy greens, and sprouts) and water. Often associated with foodborne outbreaks, EHEC possess unique virulence factors that facilitate effective colonization of the human gastrointestinal tract and subsequent release of Shiga toxin. This article reviews the epidemiology, pathogenesis, clinical presentation, treatment, and prevention of EHEC infections, focusing on E. coli O157:H7, the serotype most common in North America, and E. coli O104:H4, the serotype responsible for the EHEC outbreak in Germany in 2011.

Infections in Travelers

Mayan Bomsztyk and Richard W. Arnold

Travel medicine continues to grow as international tourism and patient medical complexity increases. This article reflects the state of the current field, but new recommendations on immunizations, resistance patterns, and treatment modalities constantly change. The US Centers for Disease Control and the World Health Organization maintain helpful Web sites for both patient and physician. With thoughtful preparation and prevention, risks can be minimized and travel can continue as safely as possible.

Serious Group A Streptococcal Infections

Christopher J. Wong and Dennis L. Stevens

The spectrum of illnesses caused by group A streptococcus (GAS) includes invasive infections, noninvasive infections, and noninfectious complications. Increasingly virulent infections associated with high morbidity and mortality have been observed since the late 1980s and continue to be prevalent in North America and worldwide. Penicillin remains the therapy of choice, with the addition of clindamycin recommended in high risk
cases. Early recognition of GAS as the cause of these serious clinical syndromes is critical for timely administration of appropriate therapy. In this review, the pathophysiology, clinical manifestations, and treatment of invasive GAS infections are discussed.

Management of Urinary Tract Infections in the Era of Increasing Antimicrobial Resistance

Amanda Kay Shepherd and Paul S. Pottinger

Antimicrobial resistance of urinary pathogens is increasing. Most urinary tract infections (UTIs) should still be treated empirically. However, patients with recurrence or other risk factors for resistance may benefit from urine culture. Patients with recurrent UTI often resort to antibiotic prevention, a risky proposition in terms of resistance. Non-antimicrobial preventative methods should be considered first. If preventative antibiotics must be used, postcoital patient-initiated protocols are effective and reduce overall antibiotic exposure compared with continuous prophylaxis. Consider referring patients for urologic evaluation when at risk for complicated UTIs or when recurrence continues despite conservative interventions.