SESSION 1: PEDIATRICS, GERIATRICS AND GASTROINTESTINAL DISORDERS

Activity No. 0217-0000-14-022-H01-P; 3.5 contact hours.

PEDIATRICS
Kirsten H. Ohler, Pharm.D., BCPS
Clinical Assistant Professor, University of Illinois Hospital and Health Sciences System, Chicago, Illinois

1. Describe the most common pathogens associated with neonatal and pediatric sepsis/meningitis.
2. Describe current therapeutic options for the management of neonatal and pediatric sepsis/meningitis.
3. Identify the drugs available for preventing and treating respiratory syncytial virus.
4. Describe the most common causative organisms of otitis media and potential treatment options.
5. Identify the recommended pediatric immunization schedule and barriers to routine immunization.
6. Discuss the differences in anticonvulsant pharmacokinetics and adverse effects between children and adults.
7. Describe the current drug therapy for treating patients with attention-deficit/hyperactivity disorder.

GERIATRICS
Dominick P. Trombetta, Pharm.D., BCPS
Associate Professor, Pharmacy Practice Geriatrics/Internal Medicine, Wilkes University, Wilkes-Barre, Pennsylvania

1. Identify age-related pharmacokinetic and pharmacodynamic changes in older adults.
2. Evaluate the pharmacotherapeutic regimens of older adults to support optimal physical and mental function.
3. Identify inappropriate medication prescribing in older adults.
4. Recommend appropriate pharmacotherapy for patients with dementia.
5. Evaluate the risks and benefits of antipsychotic use in older adults with dementia.
6. Recommend appropriate interventions for patients suffering from behavioral symptoms related to dementia.
7. Differentiate among the types of urinary incontinence and recommend appropriate treatments.
8. Recommend an appropriate benign prostatic hypertrophy treatment based on individual American Urological Association Symptom Index.
9. Recommend appropriate analgesic therapy for older adults with osteoarthritis.
10. Discuss risks and benefits of medication classes used to treat rheumatoid arthritis.

GASTROINTESTINAL DISORDERS
Brian A. Hemstreet, Pharm.D., FCCP, BCPS
Assistant Dean for Student Affairs, Associate Professor, Regis University School of Pharmacy, Rueckert-Hartman College for Health Professions, Denver, Colorado

1. Review and apply national guideline treatment strategies to the following gastrointestinal (GI) disorders: gastroesophageal reflux disease (GERD), peptic ulcer disease (PUD), ulcerative colitis (UC), Crohn disease (CD), viral hepatitis, chronic liver disease, constipation, diarrhea, irritable bowel syndrome (IBS), nausea, vomiting, pancreatitis, and upper GI bleeding, including prevention of stress-related mucosal disease (SRMD).
2. Recommend appropriate pharmacologic and nonpharmacologic interventions for the management of GERD.
3. Differentiate between clinical signs, symptoms, risk factors, and treatment of both Helicobacter pylori– and nonsteroidal anti-inflammatory drug– associated PUD.
4. Discuss the role of pharmacologic intervention in the treatment of nonvariceal upper GI bleeding and the prevention of SRMD.
5. Review the clinical differences in signs, symptoms, and treatment of CD and UC.
6. Identify the common manifestations of chronic liver disease and their treatment.
7. Review the treatment and prevention of both acute and chronic viral hepatitis.
8. Recognize pertinent information for educating patients and prescribers regarding the appropriate use of pharmacologic agents for various GI disorders.
9. Recommend appropriate pharmacologic and nonpharmacologic interventions for diarrhea and constipation.
10. Review recommendations for the treatment and prevention of nausea and vomiting.
11. Discuss the clinical and treatment differences between acute and chronic pancreatitis.
12. Discuss the role of pharmacologic intervention in the treatment of IBS.
13. Discuss commonly encountered statistical tests and concepts using GI disorders as examples.

SESSION 2: ONCOLOGY SUPPORTIVE CARE AND ENDOCRINE AND METABOLIC DISORDERS
Activity No. 0217-0000-14-023-H01-P; 3.0 contact hours

ONCOLOGY SUPPORTIVE CARE
LeAnn B. Norris, Pharm.D., BCPS, BCOP
Clinical Assistant Professor, Department of Clinical Pharmacy and Outcomes Sciences, South Carolina College of Pharmacy, Columbia, South Carolina

1. Identify, assess, and recommend appropriate pharmacotherapy for managing common complications of cancer chemotherapy, including nausea and vomiting; myelosuppression and the appropriate use of growth factors; infection; anemia and fatigue; cardiotoxicity; and extravasation injury.
2. Assess and recommend appropriate pharmacotherapy for managing cancer-related pain.
3. Assess and recommend appropriate pharmacotherapy for managing oncologic emergencies, including hypercalcemia, hyperuricemia, and spinal cord compression.

ENDOCRINE AND METABOLIC DISORDERS
Brian K. Irons, Pharm.D., FCCP, BCACP, BCPS, BC-ADM
Associate Professor of Pharmacy Practice, Division Head-Ambulatory Care, Texas Tech University Health Sciences Center, Lubbock, Texas

1. Differentiate between the diagnostic and classification criteria for various endocrine and metabolic disorders including type 1 and type 2 diabetes mellitus, obesity, polycystic ovary syndrome, and disorders of the thyroid, adrenal, and pituitary glands.
2. Compare and contrast the various therapeutic agents used in treating endocrine and metabolic disorders.
3. Select appropriate treatment and monitoring options for a given patient presenting with one of the above disorders.
4. Recommend appropriate therapeutic management for secondary complications from diabetes or thyroid disorders.
SESSION 3: MEN’S AND WOMEN’S HEALTH AND AMBULATORY CARE
Activity No. 0217-0000-14-024-H01-P; 3.0 contact hours.

MEN’S AND WOMEN’S HEALTH
Shareen Y. El-Ibiary, Pharm.D., FCCP, BCPS
Professor, Department of Pharmacy Practice, Midwestern University College of Pharmacy-Glendale, Arizona

1. Recommend appropriate treatment options for patients with menopausal symptoms, osteoporosis, and conditions in pregnancy, infertility, and sexual dysfunction.
2. Identify drugs that are considered safe and unsafe in pregnancy and lactation.
3. Modify contraceptive regimens on the basis of estrogen- and progestin-related adverse effects or drug interactions.
4. Devise a pharmacotherapeutic plan for appropriate contraceptive use, contraceptive method mishaps, and use of emergency contraception.
5. Identify common sexually transmitted diseases and recommend appropriate pharmacotherapy.

AMBULATORY CARE
Ilia M. Harris, Pharm.D., FCCP, BCPS
Associate Professor, University of Minnesota Medical School, Minneapolis, Minnesota

1. Classify patients, assess control, and select and monitor appropriate acute and preventive treatment for pediatric and adult patients with asthma and for adult patients with chronic obstructive pulmonary disease, gout, and conditions requiring anticoagulation, depending on patient-specific factors.
2. Discuss indications for warfarin, goal international normalized ratio (INR), and therapy duration for specific patients; adjust therapy according to INR, other clinical findings, and/or patient factors; and design a treatment plan for a patient receiving warfarin who needs to undergo an invasive procedure.
3. Determine the appropriate immunizations for an adult given his or her age and medical conditions.

SESSION 4: NEUROLOGY AND GENERAL PSYCHIATRY
Activity No. 0217-0000-14-025-H01-P; 3.0 contact hours.

NEUROLOGY
Melody Ryan, Pharm.D., MPH, FCCP, BCPS, CGP
Associate Professor, University of Kentucky, Lexington, Kentucky

1. Differentiate between various seizure medications on the basis of use and adverse effects.
2. Develop a treatment strategy for status epilepticus.
3. Identify appropriate treatment strategies for primary and secondary stroke prevention.
4. Determine the appropriateness of treatment with tissue plasminogen activator for acute stroke.
5. Examine common adverse effects associated with the treatment of Parkinson disease.
6. Differentiate between regimens for acute and prophylactic treatment of migraine, tension, and cluster headaches.

GENERAL PSYCHIATRY
Jacintha S. Cauffield, Pharm.D., BCPS
Associate Professor of Pharmacy Practice, The Lloyd L. Gregory School of Pharmacy, Palm Beach Atlantic University, West Palm Beach, Florida

1. Describe pharmacotherapeutic options for managing the following psychiatric disorders: major depression, bipolar disorder, schizophrenia, anxiety disorders, insomnia, and alcohol withdrawal/dependence.
2. Describe the drugs used to treat these disorders with respect to unique pharmacologic properties, therapeutic uses, adverse effects, and cognitive and behavioral effects.
3. Formulate a pharmacotherapeutic treatment plan when presented with a patient having major depression, bipolar disorder, schizophrenia, anxiety disorder, insomnia, and alcohol withdrawal/dependence.

**SESSION 5: NEPHROLOGY, INFECTIOUS DISEASES, AND HIV/INFECTIOUS DISEASES**

Activity No. 0217-0000-14-027-H01-P; 3.0 contact hours.

**NEPHROLOGY**
John M. Burke, Pharm.D., FCCP, BCPS
Professor of Pharmacy Practice and Associate Dean for Post-Graduate Education, St. Louis College of Pharmacy, St. Louis, Missouri

1. Categorize acute kidney injury (AKI) as prerenal, intrinsic, or postrenal, based on patient history, physical examination, and laboratory values.
2. List risk factors for AKI and formulate preventive strategies to decrease the risk of developing AKI in specific patient populations.
3. Formulate a therapeutic plan to manage AKI.
4. Identify medications and medication classes associated with acute and chronic kidney damage.
5. Discuss factors that determine the efficiency of removal of drugs by dialysis.
6. Identify the stage of chronic kidney disease (CKD) on the basis of patient history, physical examination, and laboratory values.
7. List risk factors for the progression of CKD and formulate strategies to slow the progression of CKD.
8. Describe the common complications of CKD.
9. Develop a care plan to manage the common complications observed in patients with CKD (e.g., anemia, secondary hyperthyroidism).

**INFECTIOUS DISEASES**
Curtis L. Smith, Pharm.D., BCPS
Professor, Ferris State University, Lansing, Michigan

1. Describe appropriate treatment of patients with respiratory tract infections, urinary tract infections, central nervous system infections, skin and soft tissue infections, osteomyelitis, intra-abdominal infections, and endocarditis.
2. Identify appropriate preventive therapy for respiratory tract infections, CNS infections, endocarditis, and surgical wound infections.

**HIV/INFECTIOUS DISEASES**
Curtis L. Smith, Pharm.D., BCPS

1. Formulate an appropriate regimen to prevent or treat human immunodeficiency virus infections, including initiation and monitoring therapy.
2. Discuss appropriate treatment of the various acquired immunodeficiency syndrome opportunistic infections, including primary and secondary prophylaxis.
3. Describe appropriate treatment and preventive therapy for tuberculosis, including infections with drug-resistant organisms.
4. Classify the various antifungal agents and explain their role in common fungal infections.
PHARMACOKINETICS: A REFRESHER
Curtis L. Smith, Pharm.D., BCPS

1. Identify and provide examples using basic pharmacokinetic concepts commonly used in clinical practice, including elimination rate constant, volume of distribution, clearance, and bioavailability.
2. Describe specific pharmacokinetic characteristics of commonly used therapeutic agents, including aminoglycosides, vancomycin, phenytoin, and digoxin, as well as pharmacokinetic alterations in patients with renal and hepatic disease.
3. Define important issues as they pertain to drug concentration sampling and interpretation.

BIOSTATISTICS: A REFRESHER
Kevin M. Sowinski, Pharm.D., FCCP
Professor of Pharmacy Practice, Purdue University College of Pharmacy, Adjunct Professor of Medicine, Indiana University School of Medicine, Indianapolis, Indiana

1. Describe differences between descriptive and inferential statistics.
2. Identify different types of data (nominal, ordinal, continuous [ratio and interval]) to determine an appropriate type of statistical test (parametric vs. nonparametric).
3. Describe strengths and limitations of different types of measures of central tendency (mean, median, and mode) and data spread (standard deviation, standard error of the mean, range, and interquartile range).
4. Describe the concepts of normal distribution and the associated parameters that describe the distribution.
5. State the types of decision errors that can occur when using statistical tests and the conditions under which they can occur.
6. Describe hypothesis testing, and state the meaning of and distinguish between p-values and confidence intervals.
7. Describe areas of misuse or misrepresentation that are associated with various statistical methods.
8. Select appropriate statistical tests on the basis of the sample distribution, data type, and study design.
9. Interpret statistical significance for results from commonly used statistical tests.
10. Describe the similarities and differences between statistical tests; learn how to apply them appropriately.
11. Identify the use of survival analysis and different ways to perform and report it.

STUDY DESIGNS: FUNDAMENTALS OF DESIGN AND INTERPRETATION
Kevin M. Sowinski, Pharm.D., FCCP

1. Define, compare, and contrast the concepts of internal and external validity, bias, and confounding in clinical study design.
2. Identify potential sources of bias in clinical trials; select strategies to eliminate or control for bias.
3. Outline the hierarchy of evidence generated by various study designs.
4. Compare and contrast the advantages and disadvantages of various study designs (e.g., prospective; retrospective; case-control; cohort; cross-sectional; randomized controlled clinical trials; systematic review; meta-analysis). Delineate the difference between parallel and crossover study designs.
5. Select from various biostatistical measures to appropriately compare groups or their assessments from various study designs and use their findings/output to interpret results.
6. Define and evaluate odds, odds ratio, risk/incidence rate, risk ratio/relative risks (RRs), and other risk estimates. Compute and evaluate number needed to treat and number needed to harm. Define and calculate terms such as point and period prevalence, incidence rate, prevalence rate, absolute risk difference, and RR difference.
7. Define and calculate terms such as true positive, false positive, true negative, false negative, sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, and negative likelihood ratio.
SESSION 7: FLUIDS, ELECTROLYTES & NUTRITION AND CRITICAL CARE  
Activity No. 0217-0000-14-028-H01-P; 3.0 contact hours.

FLUIDS, ELECTROLYTES & NUTRITION  
Judith L. Kristeller, Pharm.D., BCPS  
Associate Professor, Wilkes University, Wilkes Barre, Pennsylvania

1. Calculate the osmolarity of intravenous fluids and compare with normal plasma osmolarity.  
2. Recommend an appropriate intravenous fluid regimen and monitoring parameters given a patient’s clinical characteristics.  
3. Discuss the appropriate use and risks of hypertonic and hypotonic saline, and recommend a treatment regimen and monitoring parameters to ensure safe and effective use of these intravenous fluids.  
4. Assess electrolyte abnormalities and recommend an appropriate pharmacologic treatment plan based on individual patient signs and symptoms.  
5. Discuss appropriate indications for the use of enteral and parenteral nutrition (EN and PN).  
6. Recommend a patient-specific EN formula, infusion rate, and monitoring parameters.  
7. Recommend a patient-specific PN formula and monitoring plan based on the type of intravenous access, nutritional needs, comorbidities, and clinical condition.  
8. Discuss strategies for preventing complications associated with EN and PN.

CRITICAL CARE  
Judith L. Kristeller, Pharm.D., BCPS

1. Interpret hemodynamic parameters and acid-base status in critically ill patients.  
2. Discuss the differences in treatment of hypovolemic and septic shock.  
3. Discuss the appropriate use of fluids, vasopressors, antibiotics, and corticosteroids in patients with severe sepsis or septic shock.  
4. Discuss strategies to optimize the safety and efficacy of therapeutic hypothermia for patients after cardiac arrest.  
5. Recommend therapeutic options to minimize delirium, and provide optimal analgesia, sedation, and paralysis in critically ill patients.  

SESSION 8: CARDIOLOGY I AND CARDIOLOGY II  
Activity No. 0217-0000-14-029-H01-P; 3.0 contact hours.

CARDIOLOGY I  
Shannon W. Finks, Pharm.D., FCCP, BCPS  
Associate Professor, University of Tennessee College of Pharmacy, Clinical Pharmacy Specialist, Cardiology, Veterans Affairs Medical Center, Memphis, Tennessee

3. Devise a treatment plan for patients presenting with ventricular and/or life-threatening arrhythmias.  
4. Differentiate between goals and treatment for hypertensive emergencies and hypertension without progressive organ damage.  
5. Provide evidence-based treatment for a patient given a diagnosis of idiopathic pulmonary arterial hypertension.
1. Recommend patient-specific pharmacologic therapy for the management of chronic heart failure, with an emphasis on mortality-reducing agents and their target doses.

2. Develop an evidence-based pharmacologic regimen and monitoring plan for patients with atrial fibrillation.

3. Develop an optimal pharmacologic management plan for a patient with hypertension according to practice guidelines and clinical trial evidence.

4. Identify patients at risk of atherosclerotic cardiovascular disease (ASCVD) according to the Pooled Cohort Equation to estimate the 10-year ASCVD risk and determine in whom statin therapy should be initiated.

5. In patients with or at risk of ASCVD, determine the appropriate intensity of statin therapy according to the four identified benefit groups.

6. Create an evidence-based pharmacologic regimen for a patient with coronary artery disease in both the presence and absence of stable angina.

7. Identify and determine the appropriate therapeutic goals for a patient with dyslipidemia based on cardiovascular (CV) risk factors and the Framingham risk score.

8. Develop a pharmacologic treatment plan for a patient with dyslipidemia based on various cholesterol goals, and CV risk factors.