MED 809: Multi-systems Disease (MSD)
Autumn 2018

Mondays, Tuesdays & Fridays
8:00 a.m. to 12:00 p.m. & 1:00 to 5:00 p.m.
1001 Shadow Lane

Course Chairs:
David DiJohn, MD
Ewa Olech, MD

Course Description and Learning Objectives:

This course takes an integrated approach to complex disorders that involve multiple tissues, organs, and systems, including infection and immunity, to provide a broad understanding of issues related to the classification, biologic properties, and laboratory diagnosis of human pathogens as well as the diagnosis and management of chronic multisystem disorders. Additionally, a comprehensive overview of pathophysiology, epidemiology, biostatistics, diagnostic tests, and therapeutic principles related to infectious diseases and selected multisystem diseases are covered.

- Describe the essential features of human pathogens, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with infectious diseases.
- Identify appropriate therapeutic options for selected infectious diseases.
- Determine how epidemiologic, socioeconomic, behavioral, sociocultural, and community factors may impact the care of patients with infectious diseases.
- Describe how wellness, nutrition, hospitality principles, pain management, and integrative medicine may contribute to the care of patients with infectious diseases.
- Recognize bioethical issues germane to the medical care of patients with infectious diseases.
- Recognize end-of-life issues germane to patients with infectious diseases.
- Construct a differential diagnosis based on the clinical presentation of a patient with a hematologic disease and apply diagnostic reasoning to narrow the differential.
- Develop pertinent clinical questions related to the diagnosis and/or treatment of infectious diseases, and utilize appropriate resources to answer those questions in a self-directed fashion.
- Describe the essential features of human pathogens, their structures and virulence factors, and the epidemiology, clinical features, pathogenesis, pathophysiology, and laboratory findings associated with selected multisystem diseases.
- Identify appropriate therapeutic options for selected multisystem diseases.
- Describe epidemiologic, socioeconomic, behavioral, sociocultural, and community factors that impact the care of patients with selected multisystem diseases.
- Describe how wellness, nutrition, hospitality principles, pain management, and integrative medicine may contribute to the care of patients with selected multisystem diseases.
- Recognize bioethical and end-of-life issues germane to the medical care of patients with selected multisystem diseases.
- Construct a differential diagnosis based on the clinical presentation of a patient with a multisystem disease and apply diagnostic reasoning to narrow the differential.
- Develop pertinent clinical questions related to the diagnosis and/or treatment of selected multisystem diseases, and utilize appropriate resources to answer those
- questions in a self-directed fashion.

Required and Recommended Textbooks:

Required

- Abbas, A. K., & Lichtman, A. H. (2014). *Basic Immunology: Functions and Disorders*. 4th edition Elsevier Saunders.

- Kumar, V., Abbas, A. K., & Aster, J. C. (2014) *Robbins and Cotran Pathologic Basis of Disease* (Robbins Pathology). 9th ed. Elsevier Saunders.
- Ross, M. H., & Paulina, W. (2015). *Histology: A Text and Atlas: with Correlated Cell and Molecular Biology*. 7th ed. Wolters Kluwer | Lippincott, Williams & Wilkins.

Recommended

- Drake, R. L., Vogl, W. A., & Mitchell, A. W. (2015). *Gray's Anatomy for Students*. 3rd ed. Elsevier Saunders.
- Fletcher, R., & Fletcher, S. (2013). *Clinical Epidemiology: The Essentials*. 5th ed. Wolters Kluwer.
- Gladwin, M., & Trattler, W. (2015). *Clinical Microbiology Made Ridiculously Simple*. 6th ed. MedMaster Publishing Co.

Additional materials may be assigned at the onset and throughout the duration of the course to aid/facilitate learning objectives.

Course Schedule & Weekly Objectives:

Week 1 – November 5-9, 2018 – Rheumatic & Connective Tissue Diseases (Felty Syndrome)

Topics include:

- Systemic lupus erythematosus (SLE)
- Rheumatoid arthritis (RA)
- Sjogren syndrome and anti-phospholipid syndrome
- Inflammatory myopathies
- Systemic sclerosis and mixed connective tissue disease
- Seronegative spondyloarthropathies
- Crystal-related arthropathies
- Immunosuppressive agents and disease-modifying anti-rheumatic drugs

Assigned Readings & Review Materials:

Week 2 – November 12-16, 2018 – Vasculitis & related Disorders

Topics include:

- Large vessel (giant cell/temporal, Takayasu, aortitis, polymyalgia rheumatic)
- Medium vessel (PAN, Kawasaki, Buerger, primary angiitis of the CNS
- Small vessel, immune complex (including Henoch-Schonlein, cyroglobulinemia, hypersensitivity vasculitis, hypocomplementenemic urticarial vasculitis syndrome)
- Small vessel, ANCA+ (MP, Wegener, Churg-Strauss)
- Behcet's Disease, Cogna's Syndrome, relapsing polychondritis
- Mimics of vasculitis (sarcoidosis, IgG4-related disease)
- Diagnostic approach of suspected vasculitis (laboratories, imaging, pathology) and
- treatment of vasculitis

Assigned Readings & Review Materials:

Week 3 – November 19-21, 2018 – Complex Multi-genic Disorders (T-giving; No Case)

Topics include:

- Trisomies
- Chromosome 22q11.2 deletion syndrome
- Sex chromosome abnormalities (Klinefelter, Turner)

- Trinucleotide repeat disorder
- Mitochondrial disorders
- Epigenetic disorders (genomic imprinting)
- Mosaicism
- Molecular genetic testing and diagnostics

EXAM 1: November 19, 2018

Week 4 – November 26-30, 2018 – Immunodeficiency Syndromes

Topics include:

- Defects in innate immunity (periodic fevers)
- Defects in lymphocyte maturation (SCID, XLA, DiGeorge)
- Defects in lymphocyte function (Hyper-IgM, CID)
- Defects in lymphocyte function (IgA deficiency, XLP)
- Wiskott-Aldrich, Ataxia-Telangiectasia
- Amyloisdosis
- Diagnosis and Treatments

EXAM 2: December 3, 2018

Week 5 – December 3-7, 2018 – Bacteria (Tuberculosis)

Topics include:

- Gram-positive
- Gram-negative
- Mycobacteria and spirochetes
- Anaerobes and obligate intracellular bacteria
- Antibacterial pharmacology
- Epidemiology

Assigned Readings & Review Materials:

Week 6 – December 10-14, 2018 – Viruses (HIV)

Topics include:

- Acute infection (influenza)
- Acute infection (measles, mumps, polio, *etc.*)
- Latent infection (HIV)
- Latent infection (HSV, VZW, CMV)
- Transforming infections (EBV)
- Antiviral pharmacology
- Epidemiology of influenza pandemics
- Zoonotic viruses and *The Coming Plague*

Assigned Readings & Review Materials:

Week 7 – December 17-21, 2018 – Fungi & Parasites (Malaria)

Topics include:

- Yeast, moulds (molds), dimorphs, and antifungal pharmacology
- Protozoa and Metazoa

- Emerging infectious diseases
- Antiparasitic pharmacology
- Epidemiology

FINAL EXAM: December 21, 2018

Course Requirements & Evaluation:

Three (3) summative National Board of Medical Examiners (NBME) exams will be administered throughout the duration of the course, utilizing U.S. Medical Licensing Examination (USMLE)-type questions. Formative and summative assessments for small group activities, *e.g.* active engagement in problem-based learning sessions, in addition to preparation quizzes and written assignments will be administered throughout the course's duration. It is imperative that students engage in individual, small group, and class discussions to effectively contribute to active learning activities as well as offer and receive constructive feedback and assessment.

Students are expected to arrive on time to all course sessions and prepared to participate actively and engage in all learning and small group activities. Additionally, students are expected to be respectful, take responsibility and accountability for their own choices, actions, and/or decision. This includes the demonstration of personal and professional integrity, which is vital for students in taking responsibility of their own education. It is expected that students will dedicate the necessary time (honing study skills), and effort in acquiring (increasing critical thinking abilities) and mastering (content mastery) the course's information. It is also expected that students will participate in wellness activities and/or utilize the School and University's resources when necessary to facilitate and navigate their learning with attention to self-care and well-being.

Grading:

A pass/fail (P/F) grade is based upon satisfactory participation in small group activities, the timely completion of written assignments and exercises, and successful passage on the summative NBME exams.

Dress Code:

Students represent not only themselves, but also the medical profession to those with whom they have contact. Appropriate and professional attire should be worn, especially when students are in patient care settings or when contact with patients is anticipated. Students should be aware that personal appearance may serve to inspire or hinder the establishment of the trust and confidence that are essential in the doctor-patient relationship. Jeans, sandals, and shorts (and other casual attire) are not considered professional dress. Scrubs are worn in the operating room, in the anatomy lab or in other clinical circumstances to protect the operator's clothing from soilage. Scrubs, in general, should not be worn outside of the lab or hospital, and scrubs worn in the operating room should not be worn outside of the operating room. (*Please refer to Section 6: Professionalism in the UNLVSOM Student Handbook for guidelines pertaining specifically to dress and deportment.*)

University Expectations and Resources:

Academic Misconduct – Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Academic Misconduct Policy and are encouraged when faced with choices to

always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: http://studentconduct.unlv.edu/misconduct/policy.html.

Copyright – The University requires all members of the University Community to familiarize themselves and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject youto federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: http://www.unlv.edu/provost/copyright.

Disability Resource Center (DRC) – The UNLV Disability Resource Center (SSC-A 143, http://drc.unlv.edu/, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with UNLVSOM's Senior Associate Dean for Student Affairs, as well as a Disabilities Specialist at the DRC to discuss appropriate options.

If you are registered with the UNLV Disability Resource Center, please submit your Academic Accommodation Plan from the DRC to UNLVSOM's Office of Student Affairs to develop strategies for implementing an accommodations plan that meets both your needs and UNLVSOM requirements. Any information provided is private and confidential. To maintain confidentiality, please do not approach course chairs or instructors before or after class to discuss accommodation needs.

Religious Holidays Policy – Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the Senior Associate Dean for Student Affairs and the course chair or faculty preceptor no later than the end of the first two weeks of classes, January 31, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. This policy shall not apply in the event that administering the test or examination at an alternate time would impose an undue hardship on the instructor or the university that could not have reasonably been avoided. For additional information, please visit: http://catalog.unlv.edu/content.php?catoid=6&navoid=531.

Incomplete Grades – Course or clerkship/elective faculty share responsibility with individual students to monitor their performance in the curriculum. The Student Progress Committee (SPC) follows student performance throughout the curriculum, and is responsible for approving all remediation plans once students have been assigned an insufficient grade, such as an 'Incomplete' or 'Fail.'

Remediation plans are developed by individual course directors, based upon individual student's identified academic and professional deficits, and tailored by both the course director and the SPC. The SPC determines deadlines for the adequate remediation of the course and provides final approval of the remediation plan. Students have the option, upon request, to appear before the SPC when plans for remediation are being considered.

Please note: In Phase 3 of the curriculum, any remediation of elective or advanced clerkship deficits must be completed prior to April 1 to meet the School of Medicine's graduation requirements.

Students are not permitted to remediate more than two (2) course grades of 'Incomplete' during a single academic year. Students who receive more than two incomplete grades must be reviewed by the SPC. (*Please refer to Section 7: Academic Policies in the UNLVSOM Student Handbook for guidelines pertaining specifically to academic progress and actions.*)

Tutoring & Academic Resources – The Academic Skills Team (AST) provides academic assistance for all UNLVSOM students taking UNLVSOM courses. Students are encouraged to stop by the AST to utilize a variety of academic services, including test-tasking skills and strategies, coping with test anxiety, and improving self-study skills in preparation for USMLE and board exams. The AST is located at: 2040 West Charleston Boulevard, 89102.

UNLV E-mail – By policy, faculty and staff should e-mail students' UNLV e-mail accounts only. All UNLV students receive a Rebelmail account after they have been admitted to the university. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. Students' e-mail prefixes are listed on class rosters, and the suffix is: @unlv.nevada.edu.