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PT 525.01: Clinical Medicine and Pharmacology

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**PT 525 Clinical Medicine and Pharmacology
Fall 2008**

Class Schedule: Monday 1:10-2:00 SB 114, Thursday 3:10-4:00 SB 114, Friday 9:10-10:00 CHEM 212.

Instructor:

Steven Fehrer, P.T., Ph.D.
SB 107, 243-2429

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Office Hours: By appointment; please arrange appointments by email.

Credits: 3

Required Textbooks:

Goodman and Snyder, Differential Diagnosis for Physical Therapists, Screening for Referral 4th edition, Saunders, 2007.

Ciccone, CD, Pharmacology in Rehabilitation 4th ed, FA Davis, 2007.

Additional Readings:

Goodman, Boissonnault, and Fuller, Pathology Implications for the Physical Therapist, 2nd edition, Saunders 2003.

Course Description:

Pathology, evaluation, differential screening, pharmacology, management of integumentary, oncological, endocrine, metabolic, gastrointestinal, infectious disease, and immunological pathology.

Purpose: To provide students with an understanding of the etiology of medical problems and the medical and pharmacological management used in the treatment of diseases commonly encountered in patients managed by a physical therapist. The topics will be presented from the perspective of differential screening to assist with identifying medical problems and determining when to refer the client to a physician.

Evaluation Methods:

The course grade will be composed of 2 tests during the semester (30 % each), and 1 comprehensive final examination (40%).

Grading Scale:

The grading criteria will follow the policy of the School of Physical Therapy and Rehabilitation Science (see student handbook) with a passing grade being a "C" and a 73 percent. All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and /or disciplinary sanction by the University. Any evidence of cheating or plagiarism will result in failure of the course. All students need to be familiar with the Student Conduct Code. The Code is available for review online at <http://www.umt.edu/SA/VP/SA/index.cfm/page1321>.

Professional Behaviors: Professional behaviors are expected in the course. These include (but are not limited to): responsibility for one's own learning, completion of group and individual assignments in a timely manner, on time attendance unless excused, coming to class prepared, treating fellow students, staff, and faculty with respect, receiving and giving constructive criticism when appropriate. Cell phones should be turned off and put away. No text messaging during class. Lap top computers may be used to take notes and when appropriate, search the web for information pertaining to the topic being discussed in class. Other uses of personal computing devices in class are prohibited. Please refer to the "Generic Abilities" section in your student handbook. If a student persistently exhibits unprofessional behavior during class, they will be subject to disciplinary action.

Teaching Methods and Learning Experiences:

This course utilizes a lecture format by power point slide presentations, assigned readings, review/study questions, and a Blackboard supplement shell.

Schedule:

- 8/25 Introduction, medical screening – Review from past courses the PT examination of the shoulder. Be prepared to complete such an examination in class 9/4. Scan chapter 1 in Goodman and Snyder
- 8/28 Systems review, red flags, constitutional symptoms – Scan chapter 1 in Goodman and Snyder
- 8/29 Pain patterns – Scan chapter 3 in Goodman and Snyder
- 9/1 No class Labor Day Holiday
- 9/4 Case study shoulder exam – Scan chapters 2 and 4 in Goodman and Snyder
- 9/5 Pharmacotherapeutics – Review Ciccone chapters 1-2
- 9/8 Pharmacotherapeutics - Review Ciccone chapter 3
- 9/11 Nonsteroidal Anti-Inflammatory Drugs – Review Ciccone chapter 15
- 9/12 Immune System – Immune physiology
For the immune system/transplantation review Goodman and Snyder chapter 12 and Ciccone chapter 37.
- 9/15 Immune System – HIV/AIDS
- 9/18 Meet with 3rd year student to discuss your case report critique
- 9/19 Immune System – Autoimmune disease – myasthenia gravis, guillain-barre syndrome, multiple sclerosis
- 9/22 Immune System – Autoimmune diseases – rheumatoid arthritis, pharmacotherapeutics - Review Ciccone chapter 16
- 9/25 Immune System – Autoimmune diseases - fibromyalgia, systemic lupus erythematosus
- 9/26 Immune System – Autoimmune diseases - scleroderma, dermatomyositis

- 9/29 Immune System – Autoimmune diseases - spondylarthropathy
- 10/2 Transplantation – Graft-versus-host disease, immunosuppression, exercise guidelines
- 10/3 Transplantation – Transplants: blood and bone marrow, kidney, heart, lung
End of material for test one
- 10/6 Oncology – Incidence, risk factors, cancer types, early warning signs
Review Goodman and Snyder chapter 13
- 10/9 Oncology – Metastases
- 10/10 TEST 1**
- 10/13 Oncology – Cancer treatment, chemotherapy – Review Ciccone chapter 36
- 10/16 Endocrine/Metabolic – Pituitary gland, thyroid, parathyroid
For the endocrine section review Goodman and Snyder chapter 11
Review Ciccone chapter 31
- 10/17 Endocrine/Metabolic – Adrenal, gonads
Review Ciccone chapter 29
- 10/20 Endocrine/Metabolic – Pancreas, type I and type II diabetes
- 10/23 Endocrine/Metabolic – Pancreas – pharmacotherapeutics
Review Ciccone chapter 32
- 10/24 Endocrine/Metabolic – Clinical tests – blood sugar levels and LEAP program
- 10/27 Integumentary – Common disorders - dermatitis
Review Goodman and Snyder pages 198-224
- 10/30 Integumentary – Skin infections
- 10/31 Integumentary – Psoriasis, ulcers, burns
- 11/3 Integumentary – Skin cancer
- 11/6 Infectious Diseases – Bacterial and viral infections
- 11/7 Infectious Diseases – Control of infections
- 11/10 Infectious Diseases - Pharmacotherapeutics
Review Ciccone chapters 33, 34, 35
- 11/13 Infectious Diseases – Pharmacotherapeutics continued
- 11/14 Hematology – Transfusion, red and white blood cell and platelet disorders
Review Goodman and Snyder chapter 5
- 11/17 Hematology – Pharmacotherapeutics – Review Ciccone chapter 25
- 11/20 Hematology - Cancers of the blood
End of material for test two
- 11/21 Gastrointestinal – Signs and symptoms, herias
For the gastrointestinal section review Goodman and Snyder chapter 8 and
Ciccone chapters 25, 27

11/24 **TEST 2**

11/27 No Class Thanksgiving Holiday

11/28 No Class Thanksgiving Holiday

12/1 Gastrointestinal – PUD, inflammatory bowel, NSAIDs

12/4 Gastrointestinal – Liver disease

12/5 Gastrointestinal – Differential diagnosis

Comprehensive Final Exam – Tuesday December 9, 2008, 8:00-10:00 AM, SB 114

Course Objectives:

1 = Knowledge and Comprehension

2 = Application

3 = Psychomotor

4 = Analysis/Synthesis

5 = Affective

A. Clinical decision Making and Examination

1.1 Describe the process of hypothesis oriented algorithms within the context of the Nagi model of disability as it is used to guide physical therapy diagnosis, evaluation, and treatment.

1.2 Differentiate between disease and illness, signs and symptoms, acute and chronic illness.

1.3 Define differential diagnosis and state the role it plays in physical therapy practice.

1.4 Describe the sources and types of pain.

2.1 Recognize constitutional symptoms of systemic disease and utilize them in the completion of differential diagnosis.

4.1 Engage in diagnostic process to establish differential diagnosis for patients across the lifespan based on evaluation of examination results and medical and psychological information.

4.2 Determine the need for further examination or consultation by a physical therapist or for referral to another health care professional.

B. Interviewing the patient

1.1 Describe the appropriate interview process for patients receiving physical therapy.

4.1 Using case studies and written examination, determine the appropriate interview questions and analyze resultant information for key indicators.

4.2 Using case studies and written examination, determine from interview data when referral to other health care professionals is appropriate.

C. Oncology

1.1 Describe the common presenting symptoms of persons with the common forms of cancer.

1.2 Describe the underlying pathology and theoretical causes of the common forms of cancer.

1.3 Describe the course of progression of the common forms of cancer.

- 1.4 Describe the typical patterns of medical management for clients with cancer.
- 1.5 Describe lifestyle risk factors for the prevention of cancer.
- 1.6 Describe the various chemotherapeutic agents and radiation therapy approaches used to manage cancer.
- 4.1 Determine the impact of common medical management for cancer on physical therapy intervention for this client population.
- 4.2 Using the typical referred pain patterns to determine if a client being seen for a possible neuromusculoskeletal problem should be referred to another health care professional.

D. Immunological diseases

- 1.1 Describe the common signs and symptoms of persons with various immunological disease states.
- 1.2 Describe the epidemiology, diagnosis and prognosis for rheumatoid arthritis and osteoarthritis.
- 1.3 Describe the appropriate physical therapy management of these clients, considering pain reduction, deformity prevention, exercise prescription, and function preservation.
- 1.4 Describe the major differences between osteo- and rheumatoid arthritis.
- 1.5 Describe the medications commonly utilized to manage arthritis.
- 1.6 Describe the common forms of medical intervention for these disorders.
- 1.7 Describe the underlying pathology and theoretical causes.
- 1.8 Describe lifestyle risk factors for acquiring AIDS.
- 4.1 Using a case study, determine the type of immunological condition and appropriate physical therapy intervention.

E. Endocrine disorders

- 1.1 Describe the common signs/symptoms of persons with endocrine disorders.
- 1.2 Describe the common forms of medical intervention for these disorders.
- 1.3 Describe the underlying pathologies for diabetes mellitus.
- 1.4 Describe the lifestyle risk factors for the prevention of type II diabetes.
- 1.5 Describe the pharmacological interventions commonly used to manage diabetes.
- 3.1 Demonstrate how to test blood glucose.
- 4.1 Determine the implications of medical management on physical therapy interventions.

F. Integumentary disorders

- 1.1 Describe the common signs/symptoms of persons with these disorders.
- 1.2 Describe the common forms of medical intervention for these disorders.
- 2.1 Demonstrate how to monitor a client's skin to assess for presence of skin cancer.
- 2.2 Demonstrate how to monitor a client's skin to assess for presence of pressure ulcers.
- 4.1 Determine the implications of medical management on physical therapy interventions.

G. Gastrointestinal and urinary tract disorders

- 1.1 Describe the common signs/symptoms of persons with these disorders.

- 1.2 Describe the common forms of medical intervention for these disorders.
- 1.3 Describe the underlying pathologies for these disorders.
- 1.4 Describe the referred pain patterns for these disorders.
- 2.1 Explain how the clinician protects self from hepatitis infection.
- 4.1 Determine the implications of medical management on physical therapy interventions.

H. Hematology and lymphatic disorders

- 1.1 Describe the common signs/symptoms of persons with these disorders.
- 1.2 Describe the common forms of medical intervention for these disorders.
- 1.3 Describe the medications used to alter blood clotting.
- 4.1 Determine the implications of medical management on physical therapy interventions.

I. Transplantation

- 1.1 Describe the common transplantation procedures.
- 1.2 Describe the potential complications that a transplant patient may encounter.
- 4.1 Determine the implications of medical management on physical therapy interventions.

J. Infectious disease disorders

- 1.1 Describe the common signs/symptoms of persons with these disorders.
- 1.2 Describe the common forms of medical intervention for these disorders.
- 1.3 Describe the medications used to treat these disorders.
- 1.4 Explain role of physical therapy in the delivery of services with clients in isolation.
- 1.5 Describe the PPD test and the significance of a positive result.
- 1.6 Explain how a therapist protects him/herself from TB exposure.
- 4.1 Determine the implications of medical management on physical therapy interventions.

K. Pharmacology

- 1.1 Describe the normal mechanisms of drug absorption, distribution, metabolism and excretion for prescription and over-the-counter drugs.
- 1.2 Describe how the processes described in 1.1 are altered by disease state and age.
- 1.3 Match common drug names to appropriate drug categories.
- 1.4 Describe common side effects of drug categories, especially those affecting physical therapy interventions.
- 2.1 Explain why physical therapists cannot prescribe drugs and should not advise patients/clients to take a particular drug.
- 2.2 Demonstrate how to effectively communicate with a physician about particular medication(s) your client is taking.
- 4.1 Given a patient history, determine the effects of a drug regimen on physical therapy treatment.
- 4.2 Determine when signs/symptoms indicate the need for a referral to a pharmacist or physician.