Pharmacology

March 6, 2010
Pacific University

Instructor: Erin E. Jobst, PT, PhD

8 AM – 5 PM

Total Hours: 15
7 contact hours March 6, 2010
8 hours Pre- and Post-assignment

Cost:

Course Description

Patients are frequently taking drugs for medical conditions that may or may not relate to the reason they are in physical therapy. Many drugs have the potential to influence therapeutic functional outcomes. Understanding basic clinical pharmacology allows physical therapists to identify common adverse drug reactions (ADRs), when to refer to other healthcare professionals, and potential ways to mitigate common ADRs during physical therapy. This course includes pharmacodynamics (how the drug affects the body) for major drug classes and pharmacokinetics (how the body responds to a drug). Emphasis will be on how physical therapy interventions – especially exercise – can affect drug absorption and distribution. The course covers drugs that affect the musculoskeletal, cardiovascular, and pulmonary systems, which an emphasis on those drug classes more like to be taken by outpatient orthopedic patients. Common ADRs, important drug-drug interactions, and potential therapy solutions to limit ADRs are discussed.

Goals

1) Use multi instructional methods to maximize the learning experience
2) Address pharmaceuticals with specific relevance to physical therapy and rehabilitation
3) Promote a higher quality of physical therapy care through increased practical knowledge of pharmaceuticals
4) Assist the therapist in meeting the demands of direct access care

Course Objectives

By the end of this course, participants will be able to:

1) accurately apply the principles of pharmacokinetics to drugs their patients are taking
2) alter how specific therapy interventions such as thermal agents, massage, and exercise are implemented to minimize effects on drug absorption and distribution
3) recognize common ADRs and formulate an appropriate plan to notify another health care professional and/or implement potential therapy solutions to mitigate ADRs
4) identify important drug-drug interactions that may affect the patient and/or rehabilitation outcomes
5) ask each patient for accurate current medication list, identify reliable drug information resources, make appropriate judgment about how these drugs may affect the patient and/or rehabilitation outcomes, and initiate appropriate follow-up action (notification of primary health care professional and/or modification of physical therapy treatment plan)

Pre-course work assignments

(1) Reading assignment: Chapter titled "Pharmacologic Considerations for the Physical Therapist" by William P. Brookfield, in Primary Care for the Physical Therapist Examination and Triage by William G. Boissonnault, 2005

(2) Project:

(a) Acquire complete medication list from a single patient. This should include all prescription and over-the-counter (nonprescription) drugs, including herbs and supplements. Include dosage and frequency for each.
(b) For each drug or supplement (excluding multivitamin/mineral supplement), list one adverse effect that may impact your physical therapy treatment and/or goals.
(c) List the resources you used to find the information you listed in (b).

Day of course lecture, projects, tasks

I. Basic pharmacological principles (3.0-3.5 hrs)

(a) Pharmacokinetics (drug administration absorption, distribution, elimination); emphasis on how exercise affects pharmacokinetic parameters
(b) Basic pharmacodynamics (receptor theory, drug selectivity, etc.)
(c) Reliable and up-to-date resources for drug information

II. Selected topics in musculoskeletal pharmacology (2.0-2.5 hrs)
For each class of drugs listed below, content will include: agents commonly taken by orthopedic outpatients, clinical indications, mechanisms of action, common ADRs, common drug-drug interactions, and possible therapy solutions to limit ADRs

(a) Skeletal muscle relaxants
(b) Nonsteroidal anti-inflammatory drugs (NSAIDs)
(c) Steroidal anti-inflammatory drugs
(d) Problem-oriented patient study (POPS). The POPS is case study that presents a brief patient history, current medical status and drug therapy, rehabilitation status and current problem (which relates to medication the patient is taking and/or an

interaction between the medication and some component of physical therapy). Clinical options and potential solutions will be discussed.

III. Selected topics in cardiovascular and pulmonary pharmacology (2.0-2.5 hrs)
- (a) Antihypertensive and antihyperlipidemic drugs
- (b) Drugs for angina pectoris
- (c) Drugs for cardiac arrhythmias
- (d) Drugs for management of asthma and COPD
- (e) Decongestants and antihistamines
- (f) Problem-oriented patient study (POPS)

Post-course assignments

Student will complete problem-oriented patient studies (POPS) for drug categories that were not covered in the lecture. This will involve description of current problem and clinical options or potential solutions to mitigate the problem.

A post-course quiz will be given within the POPS.