Landmark Studies in Cardiovascular Pharmacotherapy
Phr 277k

Course Syllabus – 2004

Cooperative Pharmacy Program, University of Texas Pan – American
and The University of Texas College of Pharmacy

Course Title: Landmark Studies in Cardiovascular Pharmacotherapy

Course Number: Phr 277k

Class Schedule: Monday 8:00-9:50 AM

Class Faculty:
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Course description: This two-hour elective course will focus on important clinical trials involving cardiovascular pharmacotherapy. The overall objective of the course is to emphasize the need for the student to provide clinical evidence to support drug therapy recommendations in the treatment of cardiovascular diseases during their clinical clerkships and future practice.

Specific course objectives: This course uses examples from landmark cardiovascular studies to provide the student with an understanding of the internal and external validity of a clinical trial. By the conclusion of this course, the student will be able to cite data from clinical trials to justify their specific drug therapy treatment recommendations for a variety of cardiovascular diseases such as ischemic heart disease, left ventricular systolic dysfunction and heart failure, atrial fibrillation, myocardial infarction, hypertension and dyslipidemia.

Requisite: None

Credit Hours: 2 Credit hours (2 hours class hours per week)

Teaching methods: Students are expected to have read and evaluated each article before the scheduled class. A variety of teaching methods will be used but most class time will consist of questions and answers together with case studies.

Student evaluation: The student's final grade will be based on an average of three 100 point examinations administered over the semester. The material covered on the examinations will be cumulative over the course of the semester.

The grading scale will be:

Letter Grade	Percent Score
A	90 – 100
B	80 – 89
C	70 – 79
F	< 70

Course Policies

Attendance Policy: Students are expected to attend all lectures and discussions. Group discussion is an integral part of learning in this course. The student is expected to contact the course coordinator to obtain material missed by an excused absence.

Exams: All examinations will be given as scheduled. If extenuating circumstances occur, the student is responsible for contacting the course coordinator prior to the exam in order to reschedule the exam.

Office Hours:
Mondays 2-4 PM
Wednesdays 8-10 AM
Fridays 8-10 AM

Persons with Disabilities: If you have a documented disability which will make it difficult for you to carry out the work as outlined and/or if you need special accommodations/assistance due to the disability, please contact the Office for Services for Persons With Disabilities (OSPD), Emillia Ramirez-Schunio Hall, room 100 immediately. Appropriate arrangements/accommodations can be arranged.

Course Content:

Week 1	Orientation: Statistics, Research Design[1], Internal and External Validity
Week 2	PEPI[2] HERS[3], HERS II[4,5], WHI[6]
Week 3	ELITE[7] ELITE II[8]
Week 4	4S[9] WOSCOPS[10] PROSPER[11]

Week 5	CAST[12] Exam (100 Points)
Week 6	US Carvedilol[13] Merit HF[14] BEST[15]
Week 7	DCCT[16] UKPDS-34[17]
Week 8	DIG[18, 19] COPERNICUS[20] RALES[21]
Week 9	Phenylpropanolamine study[22] Exam (100 Points)
Week 10	CAPRIE[23] CURE[24]
Week 11	AFFIRM[25] SPAF[26]
Week 12	ISIS II[27] GUSTO[26]
Week 13	HOPE[29] ALLHAT[30] ALLHAT-LLT[31]
Week 14	HOT[32] ALLHAT (doxazocin arm)[33]
Week 15	Comprehensive Final Exam (100 points)

1. Grimes DA, Schulz KF. An overview of clinical research: the lay of the land. *Lancet* 2002 359: 57-61

2. Writing Group for the PEPI Trial. Effects of estrogen or estrogen/progestin regimens on heart disease risk factors in postmenopausal women [published correction appears in *JAMA* 1995; 274:1676]. JAMA 1995; 278: 199-208

3. Hulley S, Grady D, Bush T, et al on behalf of the Heart and Estrogen/progestin Replacement Study (HERS) Research Group. Randomized trial of estrogen plus progestin for secondary prevention of coronary heart disease in postmenopausal women. *JAMA* 1998; 280: 605-13

4. Hulley S, Furberg C, Barrett-Connor E, et al on behalf of the HERS Research Group. Noncardiovascular disease outcomes during 6.8 years of hormone therapy: Heart and Estrogen/Progestin Replacement Study follow-up (HERS II). *JAMA* 2002; 288; 58-66.

5. Grady D, Herrington D, Bittner V, et al. on behalf of the HERS Research Group. Cardiovascular disease outcomes during 6.8 years of hormone therapy: Heart and Estrogen/Progestin Replacement Study follow-up (HERS II). *JAMA* 2002; 288; 49-57.

6. Writing Group for the Women's Health Initiative Investigators. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: principal results from the Women's Health Initiative Randomized Controlled Trial. *JAMA* 2002; 288: 321-33.

7. Pitt B, Segal R, Martinez FA, et al on behalf of ELITE Study Investigators. Ramdomised trial of losartan versus captopril in patients over 65 with heart failure (Evaluation of Losartan in the Elderly Study, ELITE). *Lancet* 1997; 349: 747-52

8. Pitt B, Poole-Wilson PA, Segal R, et al on behalf of the ELITE II investigators. Effect of losartan compared with captopril on mortality in patients with symptomatic heart failure: randomized trial – the Losartan Heart Failure Survival Study ELITE II. *Lancet* 2000; 355: 1582-7

9. The Scandinavian Simvastatin Survival Study Group. Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian Simvastatin Survival Study (4S). *Lancet* 1994; 344: 1383-9

10. Shepherd J, Cobbe SM, Ford I, et al on behalf of the West of Scotland Coronary Prevention Study Group. Prevention of coronary heart disease with pravastatin in men with hypercholesterolemia. *N Engl J Med* 1995; 333: 1301-7

11. Shepherd J, Blauw GJ, Murphy MB, et al on behalf of the PROSPER study group. Pravastatin in elderly individuals at risk of vascular disease (PROSPER): a randomised controlled trial. *Lancet* 2002; 360: 1623-30

12. The Cardiac Arrhythmia Suppression Trial Investigators. Mortality and morbidity in patients receiving encainide, flecainide, or placebo: the Cardiac Arrhythmia Suppression Trial. *N Engl J Med* 1991; 324: 781-8

13. Packer M, Bristow MR, Cohn JN et al on behalf of the U.S. Carvedilol Heart Failure Study Group. The effect of carvedilol on morbidity and mortality in patients with chronic heart failure. *N Engl J Med* 1996; 334: 1349-55

14. Hjalmarson A, Goldstein S, Fagerberg B, et al. Effects of controlled-release metoprolol on total mortality, hospitalization, and well-being in patients with heart failure: The Metoprolol CR/XL Randomized Intervention Trial in Congestive Heart Failure (MERIT-HF). *JAMA* 2000; 283: 1295-1302

15. The Beta-Blocker Evaluation of Survival Trial Investigators. A trial of the beta-blocker bucindolol in patients with advanced chronic heart failure. *N Engl J Med* 2001; 344: 1659-67

16. Diabetes Control and Complication Research Group. The effect of intensive treatment of diabetes on development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 1993; 329: 977-86.

17. UK Prospective Diabetes Study (UKPDS) Group. Effect of intensive blood-glucose control with metformin on complications in overweight patients with type 2 diabetes (UKPDS-34). *Lancet* 1998; 352: 854-65

18. The Digitalis Investigation Group. The effect of digoxin on mortality and morbidity in patients with heart failure. *N Engl J Med* 1997; 336: 525-33

19. Rathore SS, Wang Y, Krumholz HM. Sex-based differences in the effect of digoxin for the treatment of heart failure. *N Engl J Med* 2002; 347: 1403-11

20. Packer M, Coats AJS, Fowler MB, et al on behalf of the Carvedilol Prospective Randomized Cumulative Survival Study Group. Effect of carvedilol on survival in severe chronic heart failure. *N Engl J Med* 2001; 344: 1651-8

21. Pitt B, Zannad F, Remme WJ, et al on behalf of the Randomized Aldactone Evaluation Study Investigators. The effect of spironolactone on morbidity and mortality in patients with severe heart failure. *N Engl J Med* 1999; 341: 709-17

22. Kernan WN, Viscoli CM, Brass LM, et al. Phenylpropanolamine and the risk of hemorrhagic stroke. *N Engl J Med* 2000; 343: 1826-32

23. CAPRIE Steering Committee. A randomized, blinded, trial of clopidogrel versus aspirin in patients at risk of ischaemic events (CAPRIE). *Lancet* 1996; 348: 1829-39

24. The Clopidogrel in Unstable Angina to Prevent Recurrent Events Trial Investigators. Effects of clopidogrel in addition to aspirin in patients with acute coronary syndromes without ST-segment elevation. *N Engl J Med* 2001; 345: 494-502

25. The Atrial Fibrillation Follow-up Investigation of Rhythm Management (AFFIRM) Investigators. A comparison of rate control and rhythm control in patients with atrial fibrillation. *N Engl J Med* 2002; 347: 1825-33.

26. Stroke Prevention in Atrial Fibrillation Investigators. Stroke prevention in atrila fibrillation Study: final results. *Circulation* 1991; 84: 527-39

27. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. Randomised trila of intravenous streptokinase, oral aspirin, both, or neither among 17 187 cases of suspected acute myocardial infarction: ISIS-2. *Lancet* 1988; 349-60

28. The GUSTO Investigators. An international randomized trial comparing four thrombolytic strategies for acute myocardial infarction. *N Engl J Med* 1993; 329: 673-82

29. The Heart Outcomes Prevention Evaluation Study Investigators. Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. *N Engl J Med* 2000; 342: 145-53

30. The ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Major outcomes in high-risk hypertensive patients randomized to angiotensin-converting enzyme inhibitor or calcium channel blocker vs diuretic: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2002; 288: 2981-2997

31. The ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Major outcomes in moderately hypercholesterolemic, hypertensive patients randomized to pravastatin vs usual care: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT). *JAMA* 2002; 288: 2998-3007

32. Hansson L, Zanchetti A, Carruthers SG, et al. Effects of intensive blood-pressure lowering and low-dose aspirin in patients with hypertension: principle results of the Hypertension Optimal Treatment (HOT) randomized trial. *Lancet* 1998; 351: 1755-62

33. The ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Major cardiovascular events in hypertensive patients randomized to doxazocin vs diuretic: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2000; 283: 1967-1975