UCONN | SCHOOL OF MEDICINE

COrE A
Unit 10: Knee Pain (Patient: Mr. Samuel Ross)
Syllabus

Dates: Mon. 10/29/18 - RAT
Wed. 10/31/18 - RAT
Fri. 11/02/18 - RAT

Faculty:
Course Directors: Pooja Luthra, Stefan Brocke
Facilitators: Stefan Brocke
Content Experts: Julian Ford, Santhana Lakshminarayanan, Robert B. Clark, Rick Zeff, Stefan Brocke, Jim Watras, Melinda Sanders, Antoine Ménoret

Summary: Samuel Ross is a 28-year old man with regular alcohol consumption presenting with knee pain. This unit will explore the structure, function and pathology associated with injury to the knee as well as other arthritides, autoimmune inflammation, and the relationship between orthopedic pain and alcohol use.

Session 1 (Mon. 10/29/18)

Learning Objectives:

At the conclusion of this TBL module when given a case scenario the student will be able to:

1. Describe and compare and contrast the two methods of taking action in decision making systems (forward search [cognitive/planning system] and caching [habit-based system])
2. Identify and relate vulnerabilities in decision making specific to alcohol use
3. Describe cue driven preparation in expectation of alcohol intake in alcohol/non-alcohol associated environments
4. Identify the regions of the brain that are affected by heavy alcohol use; relate this to the changes decision making systems discussed in Objective #1
5. Utilize the Alcohol Use Disorders Identification Test AUDIT-C and AUDIT screening tests to determine the type and stage of an alcohol use disorder (e.g., abstinent, low, moderate, heavy, binge; problem-drinker vs. alcoholic)
6. Identify functions that alcohol use can play in coping with chronic stress and pain:
    a. Define pain; compare and contrast classifications of acute versus chronic pain
    b. List and understand the pathological effects of alcohol
    c. Identify the risk factors for comorbid alcohol use disorders in adults with chronic pain
    d. Describe how acute alcohol abstinence from chronic alcohol use causes hyperalgesia
7. Describe the potential adverse effects of excess alcohol use on the patient's perception of pain and wellness and on sociovocational functioning:
    a. Describe three main reasons for contraindications of alcohol use with prescription and over-the-counter pain medications (e.g., gastrointestinal, hepatic, neurological)
    b. Describe the short-term pain-inhibiting effects of alcohol; relate how alcohol tolerance plays a role
    c. Describe how pain severity associates with alcohol use, treatment and motivation of alcohol use

   d. Describe the “self-medication hypothesis”
   e. Identify how age plays a role in alcohol use
   f. Define integrated treatments and identify how they could help benefit chronic pain patients
8. Use the SBIRT framework to select approach(es): to brief intervention to educate this patient approach (justify using this versus other potential brief intervention strategies), and/or to referral for treatment (justify why it is or is not warranted)
   a. Describe the utility of an alcohol screen test (specifically, AUDIT-C/AUDIT)
   b. Identify medications for alcohol dependence and when they may be useful
   c. Describe how effective motivational interviews, as well as patient motivation, impacts treatment prognosis and the ability of the patient to change their behavior
   d. Identify the major barriers to implementing SBIRT
   e. Compare and contrast the cost of SBIRT from the perspective of:
      i. Medical provider
      ii. Patient
      iii. Payer
      iv. Society

Required ReALMs:

1. Redish, A. D., Jensen, S., & Johnson, A. (2008). A unified framework for addiction: vulnerabilities in the decision process. *Behavioral and Brain Sciences, 31*(4), doi: 10.1017/S0140525X0800472X (Objectives: 1, 2, 3, 4)
   a. 3. Making Decisions (pp 417 only)
   b. 3.1. Transitions between decision systems (pp 419 only)
   c. 5-D. Alcohol (pp 435-436)
2. AUDIT/AUDIT-C https://www.integration.samhsa.gov/AUDIT_screener_for_alcohol.pdf (Objective: 5)
3. Zale, E. L., Maisto, S. A., & Ditre, J. W. (2015). Interrelations between pain and alcohol: An integrative review. *Clinical Psychology Review, 37*, 57-71. doi: 10.1016/j.cpr.2015.02.005 (Objectives: 6, 7)
   a. Abstract (pp 57)
   b. Overview of Pain and Alcohol (pp 58-60)
   c. Estimates of Co-occuring Pain and Alcohol Use (pp 60)
      i. **NOTE:** appreciate the economic effects of chronic pain and alcohol use, but do NOT memorize the minute details
   d. Effects of alcohol on pain (pp 61-64)
      i. **NOTE:** understand the main effects, but do NOT memorize the minute details
   e. Effects of pain on alcohol use (pp 64-66)
   f. Summary and conclusions (pp 68)
   g. **NOTE:** omit all other sections of the paper
4. Babor, T. F., McRee, B. G., Kassebaum, P. A., Grimaldi, P. L., Ahmed, K., & Bray, J. (2007). Screening, Brief Intervention, and Referral to Treatment (SBIRT): toward a public health approach to the management of substance abuse. *Substance Abuse, 28*(3), 7-22. doi: 10.1300/J465v28n03_03 http://dx.doi.org/10.1300/J465v28n03_03 pp 7-11, 15-24 (Objective: 8)
   a. **NOTE:** omit non-alcohol related drug SBIRT; appreciate, but do not memorize economic values of alcohol burdens

Optional Supplemental ReALMs:

1. Beasley, M. J., Macfarlane, T. V., & Macfarlane, G. J. (2016). Is alcohol consumption related to likelihood of reporting chronic widespread pain in people with stable consumption? Results from UK biobank. *Pain*. doi: 10.1097/j.pain.0000000000000675

2. Horn-Hofmann, C., Buscher, P., Lautenbacher, S., & Wolstein, J. (2015). The effect of nonrecurring alcohol administration on pain perception in humans: a systematic review. *Journal of Pain Research, 8*, 175-187. doi: 10.2147/JPR.S79618
3. Alford, D. P., German, J. S., Samet, J. H., Cheng, D. M., Lloyd-Travaglini, C. A., & Saitz, R. (2016). Primary Care Patients with Drug Use Report Chronic Pain and Self-Medicate with Alcohol and Other Drugs. *Journal of General Internal Medicine, 31*(5), 486-491. doi: 10.1007/s11606-016-3586-5
4. Larance, B., Campbell, G., Peacock, A., Nielsen, S., Bruno, R., Hall, W., . . . Degenhardt, L. (2016). Pain, alcohol use disorders and risky patterns of drinking among people with chronic non-cancer pain receiving long-term opioid therapy. *Drug and Alcohol Dependence, 162*, 79-87. doi: 10.1016/j.drugalcdep.2016.02.048
5. Jakubczyk, A., Ilgen, M. A., Kopera, M., Krasowska, A., Klimkiewicz, A., Bohnert, A., . . . Wojnar, M. (2016). Reductions in physical pain predict lower risk of relapse following alcohol treatment. *Drug and Alcohol Dependence, 158*, 167-171. doi: 10.1016/j.drugalcdep.2015.11.020
6. Witkiewitz, K., McCallion, E., Vowles, K. E., Kirouac, M., Frohe, T., Maisto, S. A., . . . Heather, N. (2015). Association between physical pain and alcohol treatment outcomes: The mediating role of negative affect. *Journal of Consulting and Clinical Psychology, 83*(6), 1044-1057. doi: 10.1037/ccp000003363
7. Alcohol Use and the Body http://www.collegedrinkingprevention.gov/SpecialFeatures/interactiveBody.aspx
8. Myths about alcohol use http://www.collegedrinkingprevention.gov/SpecialFeatures/alcoholMyths.aspx
9. Alcohol and Pain https://www.youtube.com/watch?v=RqXY2ccc3lU
10. Using Alcohol to Relieve Your Pain: What Are the Risks? (National Institute on Alcohol Abuse and Alcoholism) http://pubs.niaaa.nih.gov/publications/PainFactsheet/Pain_Alcohol.pdf
11. Harmful Interactions of Alcohol with Medicines http://pubs.niaaa.nih.gov/publications/Medicine/medicine.htm

Sessions 2 & 3 (Wed. 10/31/18 & Fri. 11/02/18)

Learning Objectives:

At the conclusion of this TBL unit when given a case scenario the student will be able to:

1. Diagnose and identify treatment(s) for a patient (child, adolescent, adult, or elderly) with lower extremity pain or dysfunction based on the knowledge of the anatomy, physiology, epidemiology, clinical presentation, physical exam findings, and laboratory abnormalities of common joint disorders inclusive of: mechanical injury, trauma, osteoarthritis, autoimmune arthritis (rheumatoid arthritis, juvenile idiopathic arthritis), and crystal arthritis (gout, pseudo-gout).
2. Identify the basic cellular, molecular, and immunological elements involved in regulation of immune tolerance (inclusive of receptors and cytokines).
3. Describe the effector mechanisms of autoimmunity as they relate to joint inflammation; identify the specific immunological components involved in the pathophysiology of rheumatoid and juvenile idiopathic arthritis (inclusive of receptors and cytokines).

Required ReALMs:

1. Abbas, AK, Lichtman, AH and Pillai, S. Basic Immunology: Functions and Disorders of the Immune System. 5th edition (2016), Elsevier. (Objectives: 1, 2, 3)
    a. Chapter 6 - Effector Mechanisms of T Cell-Mediated Immunity – Development and Functions of $CD4^+$ Effector T Lymphocytes - Pages 132 – 141 (already reviewed in COrE A5)
    b. Chapter 9 - Immunological Tolerance and Autoimmunity – Immunological Tolerance: Significance and Mechanisms -Pages 192-200, and – Autoimmunity – Pages 203-209

2. Pathology of Joint Disease: Osteoarthritis (PDF posted) (Objectives: 1, 3)
   http://mediasite.uchc.edu/mediasite41/Play/84f2b96b8c7945e8bb1d7fc6ade9e85e1d?catalog=4c2619b6-3b47-4650-b67a-af7145a3261e
3. Pathology of Joint Disease: Rheumatoid Arthritis (PDF posted) (Objectives: 1, 3)
   http://mediasite.uchc.edu/mediasite41/Play/2c58a84a2fba47d98eb8d1f9622e28d21d?catalog=4c2619b6-3b47-4650-b67a-af7145a3261e
4. Robbins and Cotran, Pathologic Basis of Disease, 9th edition (2015), Elsevier. (Objectives: 1, 2, 3)
   a. Chapter 6 - Diseases of the Immune System - Pages 211 - 217
   b. Chapter 26 - Bones, Joints - Pages 1207 - 1217
5. Essential Clinical Anatomy, 5th edition (2015), Wolters Kluwer. Pages 374 - 384 (Objective: 1)

   - or -

   Clinical Oriented Anatomy, 7th edition (2014), Wolters Kluwer. Pages 634 – 647 and 662 – 663
6. Calmbach, W.L., & Hutchens M. (2003). Evaluation of patients presenting with knee pain: Part II. Differential diagnosis. *Am Fam Physician*. 68(5):917-22. PMID: 13678140 (Objective: 1)
   http://www.aafp.org/afp/2003/0901/p917.html