UPDATE IN CARDIAC RISK EVALUATION

Erik Stilp, MD

Week 24

Educational Objectives:

1. Identify the major modifiable risk factors for cardiovascular disease (CVD) and understand how to assess cardiovascular risk
2. Review the revised United States Preventive Services Task Force (USPSTF) recommendations for the use of aspirin (ASA) for the prevention of CVD and know which groups might potentially benefit from aspirin use
3. Discuss the role of high sensitivity C-reactive protein (hs-CRP) in CVD risk stratification and pharmacotherapy for primary prevention

CASE ONE:

Mr. Ross U. Vastatin, a 48-year-old Caucasian male presents to your clinic to initiate care. He has no specific complaints, except for being annoyed with his significant other for making him schedule the appointment. His past medical history includes only seasonal allergies and an appendectomy at age 18. He takes no medications, works as a commuter rail conductor, and has smoked half a pack of cigarettes per day for the last 10 years. His father had "triple bypass" after an MI at age 56.

Questions:

1. **What are 9 modifiable risk factors for cardiovascular disease (CVD) you might address during this visit?**

CASE ONE:

Mr. Vastatin has never had his cholesterol checked, is not exercising due to time constraints levied by work and his three young children at home, and he has "a few" beers on weekends only. His diet includes fruits and vegetables "daily", and he doesn't consider himself stressed or depressed. His BP is 124/85 and his BMI is 27. You soon find his fasting total cholesterol is 198 with an HDL of 39 and an LDL of 131.

2. **Adult Treatment Panel III (ATPIII) guidelines suggest an assessment of his 10-year risk of developing CHD, given his 2 major risk factors. What are these two major risk factors? How do you assess his risk? What are some limitations to the currently recommended risk assessment model?**

CASE ONE CONTINUED:

Based on intermediate Framingham risk, you initiate therapeutic lifestyle changes in hopes of reducing Mr. Vastatin's LDL to <130, while counseling him regarding smoking cessation and moderate exercise. At a follow-up appointment three months later, his LDL is 138. Since he is not "at goal" after a reasonable trial of lifestyle modification you initiate Atorvastatin 10mg daily.

3. **Based on new USPSTF guidelines, should you also initiate ASA therapy? When is ASA recommended for primary prevention in women?**

CASE ONE CONTINUED:

Mr. Vastatin returns again in six months. His LDL is 105 and he is compliant with daily Atorvastatin and baby ASA. Despite multiple attempts to quit, he continues to smoke 5-10 cigarettes daily. He heard about "some planet study on Dateline" and wants to know about additional blood tests to clarify his risk of CHD.

4. **What is the current recommendation from the AHA/CDC regarding measurement of hs-CRP for assessment of CHD risk? Should this additional bloodwork be ordered?**

CASE ONE CONTINUED:

Mr. Vastatin's hs-CRP = 2.5 mg/L.

5. **<u>Briefly</u> discuss the JUPITER trial and how it may change practice. Should this patient's Atorvastatin be increased?**

<u>Primary References:</u>

1. Steinhubl SR, et al. Aspirin for the Prevention of Cardiovascular Disease: U.S. Preventive Services Task Force Recommendation Statement. *Annals of Internal Medicine*. 2009; 150: 396-404. http://www.annals.org/cgi/content/full/150/6/379
2. Hlatky, MA. Expanding the Orbit of Primary Prevention – Moving Beyond JUPITER. *New England Journal of Medicine*. 2008; 359:2280-2282. http://content.nejm.org/cgi/reprint/359/21/2280.pdf
3. Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III). *Circulation.* 2002; 106(25):3143-3421. http://www.nhlbi.nih.gov/guidelines/cholesterol/atglance.pdf

<u>Additional References:</u>

1. Ridker, PM, et al. C-reactive protein and parental history improve global cardiovascular risk prediction: the Reynolds Risk Score for men. *Circulation.* 2008; 118: 2243-2251.
2. Yusuf, S, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. *Lancet*. 2004; 364(9438):937-952.
3. Pearson, TA, et al. Markers of inflammation and cardiovascular disease: application to clinical and public health practice: A statement for healthcare professionals from the CDC and AHA. *Circulation*. 2003; 107(3):499-511.
4. Ridker, PM, et al. Rosuvastatin to Prevent Vascular Events in Men and Women with Elevated C-Reactive Protein. *New England Journal of Medicine.* 2008; 359:2195-2207. http://content.nejm.org/cgi/reprint/359/21/2195.pdf
5. D'Agostino, RB, et al. General Cardiovascular Risk Profile for Use in Primary Care: The Framingham Heart Study. *Circulation*. 2008; 117(6):743-753.

Erik Stilp attended The George Washington University School of Medicine and completed his Internal Medicine residency in the traditional program at Yale University. His areas of interest include cardiac critical care and noninvasive bedside assessment of cardiac output. He plans a fellowship in Cardiovascular Medicine following his Chief Residency at Yale.