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Practice Matters: Screening and Monitoring Hyperlipidemia

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Cover Page Footnote

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Introduction

Faith community nursing is classically described as having seven functions: health educator, personal health counselor, referral advisor, health advocate, integrator of faith and health, developer of support groups, and volunteer coordinator (Patterson, 2003). Faith Community Nurses (FCNs) provides these functions in a holistic faith-based approach using community immersion. This provision of care allows insight and understanding of the community served in urban or rural settings or in developed or developing nations. FCNs are working within communities to support public health initiatives, communicate guidelines and recommendations in church bulletins and bulletin boards (Dandridge, 2013). In the inaugural issue of the *International Journal of Faith Community Nursing*, hypertension screening was presented as an avenue of disease prevention and health promotion education to which FCNs are uniquely qualified to influence through local interventions. Hyperlipidemia often occurs as a co-morbid condition in individuals with hypertension, the topic of this issue's discussion.

The integration of faith and health, counseling, and health education are the top three interventions in which FCNs influence the life of parishioners (Dandridge, 2013). This model lends itself well to influence chronic disease management. Hyperlipidemia, a chronic condition associated with cardiovascular disease, has significant impact in the health of communities as the leading cause of death worldwide (World Health Organization [WHO], 2015). Dandridge (2013) suggests that documentation of clear health outcomes is a necessary component that quantifies the work being performed by FCNs. Health outcome documentation and goal setting are enhanced when FCNs are aware of the current incidence, prevalence, current guidelines for screening, best practices, and lifestyle changes for chronic disease management.

Objectives:

After reading this article, FCNs will:
1. Be aware of the incidence and prevalence of hyperlipidemia worldwide.
2. Be able to discuss current guidelines from the American Heart Association and the American College of Cardiology.
3. Be able to describe the role of hyperlipidemia in cardiovascular disease.
4. Be able to discuss best practices for screening for hyperlipidemia in the community settings.
5. Be able to describe lifestyle changes recommended to reduce cardiovascular disease risk in adults.

Epidemiology

It is estimated that elevated lipid levels account for over 2.5 million deaths annually (WHO, 2014). Hyperlipidemia is associated with about one third of ischemic heart disease and is a major risk factor for stroke and other cardiovascular disease in adults worldwide (Mozaffarian et al., 2015; WHO, 2014). In the United States, approximately 31 million adults have elevated lipid levels and six percent are undiagnosed (Mozaffarian et al., 2015). Adult hyperlipidemia rates are highest in Europe at over 50%, followed closely by the Americas at just under 50% (WHO, 2014). Regions with rates less than 25% were South East Asia and Africa (WHO, 2014). The WHO also associates a correlation between lipid levels and income (WHO, 2014). Adults living in countries with the higher incomes have higher lipid levels than adults living in lower income countries (WHO, 2014).

What are Lipids?

Lipids are an essential waxy substance in the blood which is made both in the body (endogenous) and ingested (exogenous) in the food we eat (Edwards, 2013; Mozaffarian, 2015). Lipids are necessary for cell structure and function, as well as in the manufacturing of bile acids, steroid hormones, and vitamin D (Edwards, 2013). Cholesterol (total cholesterol [TC], high-density cholesterol [HDL-C], low-density cholesterol [LDL-C]) and triglycerides (TG) are the most frequently reported components of serum cholesterol (Mozaffarian, 2015).

Elevated serum cholesterol is a risk factor highly associated with cardiovascular (heart attack) and cerebral vascular (stroke) disease (Mozaffarian, 2015). Other factors to consider when evaluating risk are gender, ethnicity, family history, tobacco use, hypertension, diabetes mellitus, obesity, and an inactive lifestyle (Mozaffarian, 2015). The modifiable risk factors are the focus of reducing risk; smoking cessation, blood pressure control, appropriate weight for height (BMI 17-25), HgbA1C $\leq$ 7, and an active lifestyle.

Screening Tools

The U.S. Preventive Services Task Force (USPSTF, 2015) strongly recommends screening women aged 45 years and older for lipid disorders if they are at increased risk for coronary artery disease. Men aged 35 years and older are at risk for lipid disorders and are strongly recommended for lipid screening. Men aged 20 to 35 years should receive lipid screening if they are at increased risk. In both men and women the risk of cardiovascular disease is increased if they have diabetes, a previous coronary heart disease or atherosclerosis, a family history of

cardiovascular disease before 50 years of age in a male relative and/or before 60 years of age in a female relative, tobacco use, hypertension, or a body mass index of 30 or greater (USPSTF, 2015). The new American College of Cardiology/American Heart Association [ACC/AHA] (2013) guidelines recommend the use of the atherosclerotic cardiovascular disease (ASCVD) risk estimator. The heart risk calculator is available on-line at http://www.cvriskcalculator.com/ and calculates the 10-year risk of heart disease or stroke (Stone et al., 2014). This calculator is intended for use in patients with no previous heart attack or stroke, a LDL of less than 190, and an age between 40 and 79 years.

Testing and Monitoring

Screening tests for hyperlipidemia may be completed either non-fasting or fasting (Stone et al., 2014) and should include TC, LDL-C and HDL-C. Any abnormal result should be repeated on a separate occasion and the average of both results should be considered (USPSTF, 2015). There is no consensus on the appropriate screening intervals in patients with abnormal results. One option recommended by the USPSTF (2015) is to complete the screening every five years if the previous screening is within normal limits.

Lipid Values

In the past, the ACC/AHA has supported the treatment of specific lipid laboratory values to pre-determined goal values. The 2013 ACC/AHA guideline (Stone et al., 2013) recommends the assessment of ASCVD risk using a heart risk calculator and LDL-C and non-HDL-C values (TC minus HDL-C). The introduction of a statin medication (high-intensity, moderate-intensity, or low-intensity) is determined by the provider based on risk factor assessment and the need for primary prevention (has not had a cardiovascular event) or secondary prevention (has had a cardiovascular event) protection for the patient (Stone et al., 2013). The provider views the results of repeat lipid testing as a measure of medication and life style change efficacy and will likely evaluate other pertinent laboratory values specific to the individual patient (Edwards, 2013, Stone et al., 2013). A comprehensive discussion of the algorithm is outside the scope of this article, but can be accessed at
http://circ.ahajournals.org/content/129/25_suppl_2/S1.full.pdf+html

Lifestyle Recommendations and Patient Education

American Heart Association CEO, Nancy Brown published five myths surrounding the ACC/AHA 2013 cholesterol guidelines. These myths should be reviewed with the patient and compared to the accurate information (Brown, 2013). Ms. Brown offers the truth for each myth.

Myth 1: Lifestyle choices do not matter.	Truth: Lifestyle choices are offered before and during all other drug treatment.
Myth 2: The guidelines lead to unnecessary prescribing of statins.	Truth: The patient and provider determine treatment based on risk reduction benefit.
Myth 3: Pharmaceutical companies influenced the guideline.	Truth: None of the ACC/AHA expert panel were involved with the pharmaceutical industry.
Myth 4: Statins do more harm than good.	Truth: Research has shown a reduction in deaths due to heart attack and stroke using statins.
Myth 5: The risk assessment is flawed.	Truth: For the first time, the risk assessment considers individual ethnicity, age, and gender to assess specific individual risk.

Lifestyle modifications are the foundation of all treatment of hyperlipidemia and the prevention of heart attack and stroke. The treatment of obesity (body mass index $\geq$ 30) is approached through a healthy diet and regular exercise, making sure that the individual has consumed fewer calories than expended through exercise in a day (AHA, October 2014). A diet rich in fresh fruits and vegetables, lean meats including fish, low in sodium, and high in fiber is recommended (AHA, April 2015). An active lifestyle for cholesterol reduction includes 40 minutes of exercise at least 3-4 times a week (AHA, March 2015). The AHA has published a five-part series which explains the 2013 guidelines for heart disease and stroke prevention (http://blog.heart.org/new-heart-disease-and-stroke-prevention-guidelines-released/).

Conclusions

Screenings for hyperlipidemia, with the goal of reducing cardiovascular diseases, addresses a significant health issue. Best practices for FCNs involves risk reduction by addressing modifiable risk factors (tobacco use, hypertension,

obesity, diabetes, and sedentary lifestyles) through health education. A heart risk calculator is available on-line to support FCNs assessment and education of individuals with risk factors. FCNs are positioned to deliver effective lifestyle modification education to improve the health of the community they serve through chronic disease screenings.

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