Cardiovascular Disease in Women

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PICOT

In women over age 35 (P), is routine lipid screening (I), compared to weight/ body mass index (BMI) and blood pressure screening (C), an effective tool in reducing the risk of cardiovascular disease development (O) before menopause (T)?

Introduction

Cardiovascular disease is a leading cause of death in the United States. Primary prevention is the key to reducing heart disease development in women. There has been a well established relationship between dyslipidemia and cardiovascular disease. Cholesterol is a major predictor in the development of cardiovascular disease. So much so, that practice guidelines were developed in order to determine the appropriate management of blood cholesterol in order to reduce risk of cardiovascular disease development. LDL-C levels ≥ 190 mg/dL or triglyceride levels ≥ 500 necessitate evaluation for secondary causes of hyperlipidemia. Hyperlipidemia is at the root of cardiovascular disease development. Early intervention and management is key to reducing poor outcomes.

Table 2

Factors affecting accuracy of diagnosis of CVD in women

- Endogenous oestrogen in premenopausal women may cause ST-segment changes resulting in false-positive exercise tolerance tests
- Angina and ischaemia vary with the menstrual cycle
- Inability to reach adequate heart rate in exercise tolerance tests or stress testing may impede diagnosis of ischaemia. If > 5 METS cannot be achieved then pharmacological stress testing should be used
- The lower prevalence of disease in premenopausal women results in a lower accuracy of stress testing when compared with men
- *Resting ST-T wave changes*

Reduces the accuracy of identifying changes at peak stress
ACC/AHA guidelines recommend cardiac imaging in individuals with resting ST-T wave changes on the ECG

- *Lower QRS voltage*

Affects the diagnostic accuracy of investigations in women

ACC = American College of Cardiology AHA = American Heart Association MET = metabolic equivalent

Significance

Heart disease in women is linked to greater adverse coronary reactivity, plaque erosion, distal microembolization, and microvascular dysfunction. While less prevalent in women, cardiovascular disease has more harmful effects in women than men. For example, a woman aged 45 or older who experiences a primary cardiac event, is more likely to die within one year of said event than if a male counterpart were to experience the same cardiac event. Additionally, within 5 years after a first MI, more women than men develop heart failure.

Background/Role of APN

Knowledge deficits among primary care providers regarding the differences in men and women in terms of cardiovascular disease development is likely to blame for poor outcomes. Women are at highest risk for being the least aware of the major risk factors that contribute to coronary heart disease. Furthermore, women tend to receive less preventive services for cardiovascular disease and less treatment than men do. Symptoms of heart disease are often diagnosed once the illness has progressed and irreversible damage has been done. Thus, appropriate interventions that focus on cardiovascular disease risk factors in women must be initiated in early adulthood by primary care providers, such as APNs. APNs are at the forefront of screening, assessing, evaluating, teaching, and treating. The APN has the opportunity to halt heart disease in women.

TABLE 1 **Association of psychosocial factors with coronary heart disease risk in women**[32-38]

Increased risk for CHD in women	Unclear association with CHD risk in women	Reduced risk for CHD in women
• Depression	• Anxiety	• Presence of a spouse/partner
• Anger suppression	• Hostility	• Optimism
• Stress	• Large social network	• Positive psychological attributes
–High demand and low control at work		
–Experienced at both home and work		
• Low social support/interaction		
• Frequent loneliness		
• Health self-rated as fair/poor		

Abbreviation: CHD, coronary heart disease.

Evidence for Practice Change

Dyslipidemia, especially elevated triglycerides, contribute to the greatest risk for heart disease development in women. More than half of coronary heart disease-related deaths in women can be avoided by eliminating major risk factors, including hyperlipidemia. By incorporating initiatives in the primary care setting to aid in reducing dyslipidemia, middle aged women can expect to experience better quality of life, reduced incidence of heart disease, and reduced medical costs as they approach older age.

Conclusions/Proposed Outcomes

Cardiovascular disease in women is an underestimated disease process that requires further attention to prevent potentially devastating outcomes. Part of the reason why cardiovascular disease is underestimated in women is because it is less prevalent. While cardiovascular disease is less prevalent in women, its effects can be more detrimental. There is a clear misunderstanding surrounding the differences in presentation of cardiovascular disease and treatment in women versus men. While risk factors may be similar for both sexes, the way they are manifested may have a gender-specific link that needs to be further explored. Furthermore, some risk factors are solely gender-specific such as menopause. In addition, racial disparities further complicate the issue of cardiovascular disease in women and account for additional challenges noted in minority women.

Greater attention to detail in the primary care setting can help to achieve better outcomes for women with cardiovascular disease and possibly halt its progression, thus preventing lifelong complications. Ultimately, the primary care provider can aid in reducing cardiovascular disease in the female population by employing certain steps. For example, there is a well-defined link between elevated LDL and cardiovascular disease. Additionally, literature supports that obesity and hypertension also contribute to cardiovascular disease development. With all that is known about the contributing factors for cardiovascular disease in women, there is simply not enough action undertaken by primary care providers to promote cardiovascular health in this population. The USPSTF supports lipid, blood pressure, and BMI screening as means for predicting cardiovascular disease development. By utilizing USPSTF recommendations, primary care providers have a basis for initiating conversations about cardiovascular disease in women and the efforts necessary to decrease harmful outcomes, such as routine lipid screening on an annual basis.

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