Women and heart disease: new AHA guidelines. What oral health care professionals need to know

This article reviews the new American Heart Association (AHA) Guidelines for preventing heart disease in women, and the role of dental hygienists in this preventive effort. As the link between oral health/disease and systemic health/disease becomes stronger, our role becomes more evident. As primary health care providers, it is our responsibility to educate clients about how to attain and maintain wellness, and prevent disease.

People with deep periodontal pockets have an increased risk for electrocardiographic (ECG) abnormalities according to a recent study. The relationship between periodontitis and ECG abnormalities observed in this study suggests a relationship between periodontitis and cardiovascular disease (1). Another small study showed that poor oral health was a stronger predictor of heart disease than other commonly used risk factors, such as low high-density lipoprotein (HDL) 'good' cholesterol, high levels of a clotting factor called fibrinogen and high triglycerides (2). If future studies confirm these results, an oral examination may help identify people at risk for heart attack or stroke who do not yet have symptoms of heart disease. Based on these and other studies, the oral/systemic link is becoming stronger, and the preventive role of dental hygienists becomes increasingly important.

Why the new guidelines? There have been new research findings that need to be translated into clinical recommendations. Also, women have been excluded from many of the earlier studies on cardiovascular disease (CVD). In view of the Heart and Estrogen/Progestin Replacement Study (HERS) (3) and the Women's Health Initiative (WHI) trials (4), there is a need to clarify prevention strategies based on the best available evidence. In simple lay form, the guidelines can be summarized as follows:

ALOHA

A Assess your risk and rank yourself
L Lifestyle interventions are top priority
O Other interventions prioritized and based by expert rating
H Highest priority given to women of highest risk
A Avoid class III interventions, such as HRT, antioxidant supplements and aspirin in low-risk women (5).

The scope of the problem of cardiovascular disease (CVD) in women is tremendous. Each year, nearly 500 000 women die of cardiovascular disease, which is more than the next several causes of death combined and accounts for nearly half of all their deaths (6). More women die each year than men, and with the greying of the population, we can expect these numbers to rise. Minority women, especially African American women, are at higher risk. The AHA announced a few months ago new guidelines for preventing heart disease and stroke in women based on a woman's individual cardiovascular health. The guidelines are published in *Circulation: Journal of the American Heart Association* (7). Cardiovascular disease is the leading cause of death for men and women in the USA (8). According to the new recommendations, the aggressiveness of treatment should be associated with the level of risk a woman has: a low, intermediate or high risk of having a heart attack in the next 10 years. This risk is based on a standardized scoring method developed by the Framingham Heart Study (9).

Risk assessment is a major part of the recent recommendations. Low risk means a woman has a <10% chance of having a heart attack in the next 10 years, intermediate risk is a 10–20% chance and high risk is a >20% chance. Aspirin recommendations exemplify how recommended therapy varies across three levels of risk. For all high-risk women and for those who have documented cardiovascular disease, aspirin is recommended, but is not recommended for low-risk women. Among intermediate-risk women, aspirin can be considered, providing blood pressure is controlled and the benefit is expected to outweigh the risk. Risks of side-effects could include gastrointestinal bleeding or haemorrhagic stroke (7).

Lifestyle interventions such as smoking cessation, regular exercise, heart-healthy diet and weight maintenance were given a strong priority in all women (10). The reason is twofold; they can not only reduce existing CVD, but may also prevent major risk factors from developing. ACE inhibitors and beta-blockers were recommended for all high-risk women. Tobacco cessation efforts are well within the role of dental

hygienists. For information on tobacco cessation, please visit the new American Dental Hygienists' new website (11) or the University of California, San Francisco, Smoking Cessation Leadership Center website (12).

Due to recent studies showing the benefit of statins (drugs that lower cholesterol levels), the guidelines include a strong recommendation that high-risk women, even those with low-density lipoprotein (LDL) cholesterol levels below 100 mg dl^{-1}, should receive statins, cholesterol-lowering drugs (13). The use of niacin and fibrates, other cholesterol-lowering drugs of particular benefit in specific cases, is also discussed in the guidelines. For stroke prevention, women with atrial fibrillation and intermediate or high risk for embolic stroke are recommended to take warfarin (Brand name: Coumadin) (14). If they cannot take warfarin or if they are at low risk for stroke, it is recommended they take aspirin.

Prevention measures, both lifestyle and medical, were divided into classes based on the strength of the recommendation for each level of risk. Class I is the most strongly recommended intervention, followed by class IIa and IIb. The guidelines also provide guidance on what not to do, with certain interventions labelled class III – indicating that an intervention is either not useful or could be harmful or both (15).

One of the critical factors in increasing prevention strategies is to increase awareness of women regarding importance of risk factors. In a recent survey of the American Heart Association, less than half of all women recognize that cardiovascular disease is the leading killer (16). Women at higher risk, such as African American women and diabetes, should receive even more of our attention. The Framingham Heart Study showed that diabetes is a greater risk factor in women that it is in men for heart disease. Diabetes is related to obesity and because there is an epidemic of obesity in the USA, it will no doubt increase the incidence of diabetes (17). This also increases cardiovascular disease risk in women.

We know that the epidemic of obesity will lead to substantial changes and increases in cholesterol. Weight gain has been associated with the decline in HDL cholesterol level, which is an important predictor of cardiovascular risks in women. The metabolic syndrome is an important condition that we should understand. The National Cholesterol Education Program, The Adult Treatment Panel III has developed criteria, five different risk factors, to help diagnose this condition. Once a woman has three of these risk factors, she is considered to have the metabolic syndrome. Included are a waist circumference >35 inches, triglycerides >150, HDL cholesterol <50, blood pressure ≥130/85 and a fasting glucose ≥110 (18). Based on data from the Cleveland clinic, women who have the metabolic syndrome are at higher risk of cardiovascular events compared with men. Metabolic syndrome is quite prevalent among women, especially among subpopulations such as African Americans and Mexican American women.

We have known for some years that controlling certain risk factors, such as blood pressure, cholesterol levels, etc. can save lives. It is also known that women have not always had the same benefit of preventive cardiology as men. Elevated LDL cholesterol has been definitively related to the development of cardiovascular disease in both men and women. HDL and triglyceride are stronger predictors in women than in men, and women are less likely than men to receive optimal lipid management. Low HDL-C is an independent predictor of CVD risk even when LDL-C is low. Regarding triglycerides, when the LDL to HDL ratio is >5, it has been established that triglycerides are a particularly important risk factor for cardiovascular disease. The menopause transition has been shown to affect lipid levels in a negative manner.

As health care professionals, dental hygienists around the world play a key role in the total health of clients. Sharing these guidelines and the recommendations with them is but one of the many ways we can improve the quality of the lives we touch. In summary, cardiovascular disease remains the leading killer of women and we need to continue efforts to raise awareness. Studies have shown that lipids are common and strong risk factors in women and that we have substantial data to support that management of lipids will result in a reduction of cardiovascular disease. By sharing the new guidelines with clients, you are able to place better preventive efforts into your practice.

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