Cardiovascular Diseases and Diabetes

Section III. Cardiovascular Diseases and Diabetes

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A. Overview

Cardiovascular diseases (CVD) and diabetes represent major health problems in the world today for developed and developing countries.[1] Both are part of the Leading Health Indicators in the US *Healthy People 2010* agenda. These indicators are intended to motivate citizens and communities to take action to improve the health of individuals, families, communities, and the nation.[2]

Heart disease is the number one killer of both men and women in America today. According to the American Heart Association, at least 58.8 million people in this country suffer from some form of heart disease. It kills some 950,000 Americans every year[3] and costs the United States more than any other disease—an estimated $368 billion for medical costs and lost productivity in 2004.[4] Lifestyle risk factors include tobacco use, lack of regular exercise, diets high in fat and cholesterol, uncontrolled hypertension, diabetes, and obesity.[2]

Diabetes has reached epidemic proportions in the United States and throughout the world. Over the past decade, rates have risen alarmingly.[5,6] This trend is expected to continue with a projected increase worldwide of 35%, raising the number of people affected from 135 to 300 million.[6] In the United States, the Third National Health and Nutrition Examination Survey (NHANES III) reported that diabetes affects 7.8% of adults older than 20 years of age or nearly 17 million Americans.[5] This increase is evident in both men and women, across all age groups, and among the diverse ethnic populations of America. African, Mexican, and Native Americans have a two- to five-times greater risk for developing diabetes than Caucasians.[7] An additional 12 million overweight Americans, aged 45–74, are ''prediabetics''.[8] According to the Centers for Disease Control and Prevention, the lifetime risk of developing diabetes for persons born in the year 2000 is approximately 33% for men and 39% for women.

Diabetes represents a major economic burden. Total medical expenditures attributed to diabetes exceeded a staggering $132 billion in 2002.[9] Direct medical expenditures alone totaled $91.8 billion. This was composed of $23.2 billion for diabetes care, $24.6 billion for complications of the disease, and $44.1 billion for additional chronic medical conditions. Diabetes is the fifth leading cause of death in the United States, with diabetic macroangiopathy the leading cause of death in adult patients with diabetes.[10] Almost 75% die from an atherosclerotic event. The diagnosis of diabetes in an adult confers a cardiovascular risk equivalent to established heart disease.[11] The following relationships had been documented[10–14]:

- Diabetes patients have a two- to four-fold greater risk of myocardial infarction, stroke, and CVD death than the general population, and the risk is even greater for women.
- Men with diabetes and heart disease have a 5-fold greater risk of all-cause mortality and a 12-fold risk of CVD mortality.
- Diabetes patients experience cardiovascular disease complications at an earlier age with a poorer recovery rate.
- Hypertension in patients with diabetes is 1.5 to 3 times higher than in the general population.

The incidence for both heart disease and diabetes closely parallels the growing epidemic of obesity.[15,16] Obesity has steadily developed from 15% in 1980 to 30% in 2000. This increase has been observed in both men and women and in all age and socioeconomic groups, racial and ethnic groups, and educational levels. Almost two thirds (64.5%) of US adults are overweight, and one third (30.5 %) are obese, according to the 1999–2000 National Health and Nutrition Examination Survey (NHANES). Additionally, more than 80% of adults with type 2 diabetes are obese. Obesity, particularly central obesity, carries a greater risk for developing diabetes and heart disease.[17–19]

Epidemiologic, observational, and interventional studies have examined heart disease, diabetes, and/or obesity in numerous ethnic groups. Overall, minority and low-income populations have a disproportionate burden of death and disability from all three conditions. African Americans have the highest rate of high blood pressure of all groups and have tended to develop it younger than others. Studies have shown that socioeconomic status (reflected in income and education) may underlie a substantial portion, but not all, of the higher rate of heart disease, diabetes, and obesity in minority populations.[2,5,8,11] Few data exists for a new and rapidly growing ethnic minority, the Arab Americans. This section presents studies describing these health risks in this population.

Drs. Sharifa Abou-Mediene and Farid Shamo report childhood obesity, as defined by body mass index, in a study of Arab-American children conducted by the professional staff at the ACCESS Teen Clinic. Drs. Wael Hatahet and Thomas V. Fungwe from the Wayne State University Department of Nutrition and Food Science compare established CVD risk factors among Arab-American, Arab-American, and Caucasian women. Dr. Al-Kassab spoke on the ''Recent Advances in the Diagnosis and Management of Diabetes Mellitus (DM).'' Presented were up-to-date prevalence data and the economic costs of the disease, regionally and nationally. Dr. Al-Kassab reviewed the characteristics and risk factors of type 1 and type 2 DM and their progression as chronic health problems. Michigan data and minority statistics for several racial/ethnic groups, including Arab Americans, were specifically examined. Al-Kassab also addressed myths and misconceptions about DM among Arab Americans and the critical need for ongoing research in this population. In closing, Al-Kassab provided clinical management tips and targets for the treatment of DM.

Dr. Linda A. Jaber from Wayne State University presents data from studies sponsored by the American Diabetes Association and conducted in collaboration with the University of Michigan and ACCESS. They provided representative, population-based estimates for the prevalence of diabetes and the metabolic syndrome as well as assessments of diabetes risk factors in the Arab-American Community. This report is followed by an abstract of the cardiovascular risk factors by Dr. Adnan Hammad.

Dr. Suha Kridli of Oakland University reported on the prevalence of diabetes among Chaldean Americans based on her recently completed study sponsored by the Blue Cross Blue Shield of Michigan Foundation. It was conducted in collaboration with Wayne State University, the University of Michigan, and the Arab-American and Chaldean Council.

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