Diabetes and AAPIs

Diabetes mellitus poses a significant public health challenge for the US. Some 800,000 cases are diagnosed each year, and changing demographic patterns in the US are expected to increase the number of people at risk for diabetes and who eventually develop the disease. Diabetes is a chronic disease that usually manifests as one of two major types. In type 1, which occurs mainly in children and adolescents, the body does not produce insulin, and insulin administration is required to sustain life. In type 2, which usually occurs in adults over 30 years of age, the body's tissues become unable to use its own limited supply of insulin effectively. (US DHHS, 2000).

Adult-onset diabetes also has **strong physiologic ties to cardiovascular disease** (CVD). The majority of patients with diabetes mellitus die of CVD complications rather than of causes associated directly with glucose control. (US DHHS, 2003).

Diabetes is a major clinical and public health challenge among certain racial and ethnic groups in which both new cases of diabetes and the risk of associated complications are great. Vulnerable and high-risk populations include Asian Americans and Pacific Islanders, elderly persons, and economically disadvantaged persons. Factors that account for this chronic disease epidemic include behavioral elements (e.g., increased fat consumption, decreased physical activity, obesity), demographic changes (aging, increased growth of at-risk populations), genetics, cultural and community traditions, and socioeconomic status. The level of patient knowledge and empowerment has a great impact on the disease burden associated with diabetes. (US DHHS, 2000).

Diabetes and obesity have been established as major health problems among AAPIs. Whether residing on their home islands or the US mainland, Samoans, native Hawaiians, and Micronesians are frequently affected by obesity and type 2 diabetes. (Crews, 1988; Crews et al., 1991; Pawson and Janes, 1981; Zimmet, 1979). AAPIs appear to be at increased risk for both obesity and type 2 diabetes whether they migrate to or are born in the US or adopt Western lifestyles in their homelands. Their risk of diabetes is significantly greater than that of Europeans or European Americans. (Crews, 1994).

Overweight and Obesity
Overweight and obesity are major contributors to many preventable causes of death. On average, higher body weights are associated with higher death rates. Those who are overweight or obese have a substantially higher risk of developing high blood pressure, high cholesterol, type 2 diabetes, heart disease and stroke, gallbladder disease, arthritis, sleep disturbances and breathing problems, and certain types of cancer. (US DHHS, 2000).

Risk Factors and Challenges

General

- Factors contributing to the increased prevalence of type 2 diabetes among the AAPI population include (Kaiser Permanente, 1999):
    - √ Level of acculturation
    - √ Change from a low-fat traditional diet to a high-fat Western diet
    - √ Stress from immigration
    - √ Decrease in physical activity (the association between physical activity and risk of diabetes was found to be statistically significant and independent of age, obesity, and family history)
    - √ Increased risk of developing intra-abdominal adiposity (fat belly)

- Immigrants' adoption of Western behaviors and attitudes accelerates negative health effects. (Bindon et al., 1991; Dressler, 1991).

Suggestion
Since AAPIs—especially those with a family history of the disease—are at high risk of developing diabetes, a lower threshold for screening should be employed to prevent diabetes and its related complications. (Kaiser Permanente, 1999).

Age

- AAPIs may suffer a steeper increase in the prevalence of type 2 diabetes with age than do whites or African Americans. (Crews, 1994).

Obesity

AAPIs in General

- **Risk of diabetes is associated with obesity and central adiposity.** Diabetic risk is associated with obesity—defined as an increase in body mass index (weight in kilograms divided by the square of height in meters)—and, in particular, with increased central adiposity. The high prevalence of diabetes in Asian immigrants may be a result of Westernization and urbanization, a sedentary lifestyle, and an increased consumption of animal fat, superimposed on a genetic predisposition. (Focus on Asian Americans, 2003).

- In a study of Chinese, Filipinos, Japanese, and other AAPIs residing in California, US-born and Hawaiian-born men showed greater levels of adiposity than their homeland counterparts, and all samples of AAPI men showed a similar trend of greater adiposity among those with more education. (Klatsky and Armstrong, 1991). These data can be interpreted as suggesting that **changed lifestyles and environments in the US combine to promote increased obesity in AAPIs** and that these changes are probably associated with higher levels of impaired glucose tolerance and type 2 diabetes. (Zane et al., 1994).

- Studies have also shown that although Asian Americans are generally less obese compared with the US white population, **the prevalence of diabetes and impaired glucose tolerance is at least twice that of the white population.** This is seen among different Asian ethnic groups in Hawaii, including Filipinos, Chinese, Japanese, and Koreans. This phenomenon is not limited to the US. Studies in the UK also revealed a fivefold difference in the prevalence of diabetes in Asians living in West London compared with an age-matched European population. (Focus on Asian Americans, 2003).

Suggestion
After age 25, all AAPI individuals whose weight is more than 20% above ideal or who have a body mass index of 27 kg/m^2 or greater should have their urine tested for glucose using an inexpensive dipstick (glucose strip testing). Those with positive results need to have an oral glucose tolerance test, and their family members should be tested for urinary glucose. (Crews, 1994).

Pacific Islanders

- **Samoans and native Hawaiians are among the most obese people in the world.** In each population, both men and women have average body mass indices that exceed those currently used to define obesity in the general US population. (Najjar and Rowland, 1987).

Access to Health Care

- Barriers to care among AAPIs with type 2 diabetes are numerous and ever changing, and they vary across language and ethnic groups. **Barriers include language differences, discrimination, and lack of health insurance.** These can lead to late diagnosis of type 2 diabetes, earlier onset of complications, and undesirable outcomes (e.g., blindness, amputation). (Crews, 1994).

- **In many AAPI communities, a significant number of individuals are not covered by any health insurance plan.** In 1999–2001, an average of 19% of AAPIs were uninsured. (US Census Bureau, 2002). Without health insurance, people with obesity and diabetes delay seeking medical care; as a result, the secondary pathology is more severe, and the ultimate outcome is less promising. (Crews, 1994).

- **Two assumptions or misperceptions can be barriers to quality care for AAPIs:** that AAPIs are healthier than other groups and that, because of the large number of AAPI physicians, health care among this population is already above average. (Crews, 1994).

Diet

- As a result of migration and modernization, **the food choices of some AAPIs have changed.** Many of these populations have changed from a traditional plant- and fish-based diet to a diet containing more animal protein, animal fat, and processed carbohydrates. (Diabetes in Asian and Pacific Islander Americans, 2002).

Recommendation
When providing guidelines for eating and exercise, make sure that they are congruent with AAPIs' cultural expectations and experiences, taking into account your patient's age and background. (Crews, 1994).

- A study in China demonstrated that **lifestyle modification with appropriate dietary changes and exercise significantly lowered the incidence of progression to diabetes among adults with impaired glucose tolerance.** (Focus on Asian Americans, 2003).

Suggestion
Promote a diet low in animal protein, animal fat, and processed carbohydrates, as well as increased physical activity, even in nondiabetic individuals. (Focus on Asian Americans, 2003).

Adherence Factors

- **Most AAPI cultures value deference to authority.** In a medical setting, this traditional deference can interfere with communication. Patients may express deference by smiling or nodding, which providers may misinterpret as understanding and agreement. (Yu, 1999).

Suggestion
Prevention and education programs for AAPIs should address culturally specific issues (such as the presence of strong group and collective norms). Interventions should incorporate the patient's family and community, so that the patient gets support in adhering to the recommended behavior changes and medical treatment.

- Among AAPI communities, **language differences can be overwhelming.** AAPIs represent more than 43 nationalities and speak more than 100 different languages and dialects. (APIAHF, 1991). Diagnosis of obesity and type 2 diabetes and other morbid conditions is hampered when adequate medical histories cannot be obtained, and adherence to treatment regimens for type 2 diabetes is difficult when instructions are not understood because of language differences. (Crews, 1994).

Suggestion
Pace the delivery of information. As with all your patients, avoid overwhelming your AAPI patients with too much information. Assess the individual's ability to take in information, and decide how much information to present at one time. (Yu, 1999).

Suggestion
Use patient education materials in your patient's language, such as those in Chinese (for example, *Staying Healthy with Diabetes: A Guide for the Chinese American Community)* from the Joslin Diabetes Center.

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