# Cardiovascular Disease and AAPIs

Heart disease is the leading cause of death for all people in the US, and stroke is the third leading cause of death. Heart disease and stroke are also major causes of disability and significant contributors to increasing health care costs in the US. The mortality rate for cardiovascular disease (heart disease, stroke, and chronic obstructive pulmonary disease) is greater than the combined rate for all leading causes of death (cancer, unintentional injuries, pneumonia/influenza, diabetes, suicide, kidney disease, chronic lever disease and cirrhosis). (US DHHS, 2000). The major risk factors for cardiovascular disease are hypertension, smoking, hypercholesterolemia, high alcohol consumption, and lack of physical activity. (Tamir and Cachola, 1994).

Cardiovascular disease (CVD) refers to a wide variety of heart and blood vessel diseases and conditions, including coronary heart disease (CHD), stroke, high blood pressure, and high blood cholesterol. CHD accounts for the largest proportion of heart disease. (US DHHS, 2000). Medical research continually contributes to a body of data that confirms that certain populations are disproportionately affected by diabetes and CVD. (US DHHS, 2003).

**Condition: Hypercholesterolemia**
For adults, a normal blood cholesterol level is 200 mg/dL or lower; borderline is 200 to 239 mg/dL, and 240 mg/dL or above is considered high. Based on the 1998 Heart and Stroke Statistical Update, an estimated 96.8 million American adults (51%) have blood cholesterol levels of 200 mg/dL or higher. (Hong and Bayat, 1999).

**Condition: Hypertension**
Hypertension (high blood pressure) is a leading cause of stroke, renal disease, and cardiac disease for all populations in the US. (Tamir and Cachola, 1994). Hypertension is defined as elevated blood pressure, or systolic blood pressure of 140 mmHg or higher and diastolic blood pressure of 90 mmHg or higher. One in four American adults has high blood pressure. (Hong and Bayat, 1999). Contributors to hypertension include age, gender, relative body weight, alcohol consumption, ethnicity, place of birth, educational level, psychological factors, and knowledge and awareness. (Tamir and Cachola, 1994).

Among some AAPI groups, there is a high prevalence of heart disease risk factors, and these factors vary among ethnic groups. (Tamir and Cachola, 1994). This section provides information on the incidence, health practices and beliefs, health challenges, and adherence factors related to CVD and stroke for AAPIs.

## Incidence of Disease

*AAPIs in General*

- **Lower percentages of AAPIs have high blood cholesterol.** According to the 1998 Heart and Stroke Statistical Update, 27% of AAPI men and 26% of AAPI women age 18 and older have high blood cholesterol, compared with 51% for the US population as a whole. (Hong and Bayat, 1999). It is important to note that these figures do not reflect the great variation among the ethnic groups included in the AAPI category.

- **Some groups have higher levels of serum cholesterol.** Although limited data exist concerning cholesterol levels among AAPIs, in general, **Japanese, Hawaiian, and Filipino Americans are more likely to have higher levels of serum cholesterol** compared with other AAPI ethnic groups. (Tamir and Cachola, 1994).

**Lifestyle Interventions**
A number of studies have shown that lifestyle interventions can help prevent high blood pressure and reduce blood cholesterol levels. For high blood pressure, these interventions include increasing the level of aerobic physical activity, maintaining a healthy weight, limiting the consumption of alcohol to moderate levels (for those who drink), reducing salt and sodium intake, and eating a reduced-fat diet high in fruits, vegetables, and low-fat dairy products. Moreover, studies show that a diet low in saturated fat, dietary cholesterol, and total fat—along with physical activity and weight control—can lower blood cholesterol levels. (US DHHS, 2000).

- **Slightly lower percentages of AAPIs have high blood pressure.** The age-adjusted prevalence of hypertension is 8.35% for AAPI women (compared with 10.96% for white women) and 9.67% for AAPI men (compared with 10.32% for white men). (Hong and Bayat, 1999).

*Chinese*

- **Low rates of hypertension, but low awareness of risk factors.** A 1979 study in California showed that Chinese have relatively low prevalence rates of hypertension. (Stavig et al., 1984, 1988). However, among those who were hypertensive, only 46% (versus 56% in the overall population) were aware that they had high blood pressure. Only 50% knew that high blood pressure can lead to serious illnesses (compared with 79% overall), and only 15% knew that the symptoms of high blood pressure are not felt (compared with 31% overall). (Hong and Bayat, 1999).

*Filipinos*

- **High rates of hypertension.** Relatively high rates of hypertension have been reported for Filipino Americans. In the California Hypertension Survey of 1979, Filipinos had the second highest overall prevalence of hypertension (27%). Filipinos also had significantly higher adjusted mean systolic and diastolic blood pressure compared with other Asian ethnic groups in a study among health plan members in northern California. (Hong and Bayat, 1999).

- **Poor control, but high awareness.** The rate of uncontrolled hypertension for Filipinos is almost as high as the well-documented high rate for blacks. Although Filipinos who are hypertensive are more likely to be aware of their condition and be treated for it compared with other AAPI groups, their control rate is poor (8%). (Hong and Bayat, 1999).

- A study of **uncontrolled hypertension** in AAPIs found that Filipinos have significantly higher rates of uncontrolled hypertension than do Chinese and Japanese Americans. (Angel et al., 1989). Possible contributors to the high rate of hypertension among Filipinos are environmental factors after immigration to the US and sodium-load handling. (Tamir and Cachola, 1994).

*Asian Indians*

- **Asian-Indian immigrant men have a higher prevalence of myocardial infarction.** One study compared Asian-Indian immigrants with whites and found that Asian Indians had a higher prevalence of myocardial infarction (men only), a higher prevalence of non-insulin-dependent diabetes, a lower prevalence of cigarette smoking, a lower prevalence of obesity, a lower prevalence of hypertension (men only), lower levels of high-density lipoprotein (HDL) cholesterol, and lower hypertrigliceridemia. (Hong and Bayat, 1999).

- **The prevalence of coronary heart disease is increasing.** The prevalence of CHD in Asian Indians is rapidly increasing. Although the reasons for this increase are not fully understood, it is likely related to changes in lifestyle, Westernization of diet, and the increasing prevalence of diabetes, hypertension, and dyslipidemia. (Deedwania, 2002).

- **High heart disease rates may be genetic.** Asian Indians have one of the highest rates of heart disease in the world—three times higher than the US rate. Despite fairly healthy lifestyles, many Asian Indians have very high triglyceride levels and low levels of HDL, as well as a high incidence of diabetes. A recent study suggests that a genetic abnormality may be the cause. (University of Maryland Medical System, 1999).

*Southeast Asians*

- **Hypertension is the most common risk factor.** A study of cardiovascular risk factors in Southeast Asian Americans found that hypertension was the most commonly defined risk factor among the sampled population of Cambodian, Hmong, Laotian, and Vietnamese immigrants: 27% had a moderate to high risk, and 14% had a high risk. Lower prevalence rates were found for hypercholesterolemia, cigarette smoking, and body mass index. (Bates et al., 1989).

- **Higher hypertension among Hmong immigrants.** In a 1997 study of CVD risk factors among newly arrived nonrefugee Hmong in Fresno, California, versus Hmong living in Thailand, the consequences of migration and its impact on nutrition were examined. The researchers found that hypertension was one of the most commonly defined risk factors among the Hmong immigrants. They had a significant increase in both fat and salt intake compared with their counterparts in Thailand. (Hong and Bayat, 1999).

- **Prevalence of hypercholesterolemia in Vietnamese living in California.** In a 1991 behavioral risk factor survey of Vietnamese in California, the estimated prevalence of hypercholesterolemia was 38% for men and 32% for women. By comparison, among the overall US population, rates of hypercholesterolemia were 29% for men and 28% for women. (Hong and Bayat, 1999).

*Pacific Islanders*

- **Higher weight and blood pressure among US Samoans.** San Franciscan Samoans reportedly weigh significantly more than either the native population in Samoa or the migrant population in Hawaii. (Pawson and Janes., 1982). Fifty-five percent of the men and 46% of the women exceed the 95th percentile for weight. Mean blood pressure is higher among migrant men, and Samoan men living in California have higher overall rates of hypertension than do those living in Hawaii. (Hong and Bayat, 1999).

- **Native Hawaiians at higher risk of heart disease and stroke.** Native Hawaiians have a higher risk of premature CHD and stroke due to obesity, hypertension, hypercholesterolemia, smoking, and diabetes. Awareness of hypertension is high (80% of men; 86% of women), but control is poor (20% of men; 39.3% of women). (Hong and Bayat, 1999).

- **High serum cholesterol levels point to high cardiovascular risk for native Hawaiians.** **N**ative Hawaiian men and women have prevalence rates of 50% and 45%, respectively, for cholesterol levels of 200 mg/dL or higher. For those aged 50 to 59, the prevalence rate of cholesterol levels of 240 mg/dL or greater may be as high as 40%. (Curb et al., 1991; Heiss et al., 1991; Lipid Research Clinics Program Epidemiology Committee, 1979).

## Risk Factors and Challenges

*General*

**AAPIs Overall**

- **Educational level and hypertension.** Among the AAPI population overall, educational level has been negatively correlated with hypertension. (Stavig et al., 1984, 1998). However, among Filipino men, college education has been positively correlated with hypertension. (Angel et al., 1989).

- **Boredom, depression, and hypertension.** One study found that feelings of boredom during the past two weeks and feelings depression or unhappiness were related to a higher rate of hypertension. (Angel et al., 1989). In addition, it has been suggested that the more social support a person gets from close friends and his or her spouse, and the greater a person's external involvement in society, the lower the prevalence of hypertension. (Stavig et al., 1984, 1989).

- **Medication and hypertension.** In one study, medication controlled hypertension poorly in an AAPI sample. The level of control among AAPIs was 9%, compared with 16% among the

overall hypertensive population. Only 8% of Filipino patients who took antihypertensive drugs could control their blood pressure levels. (Stavig et al., 1988).

- **Smoking.** Rates of smoking among different AAPI ethnic groups are influenced by age, gender, place of birth, level of education, level of acculturation, and other sociocultural factors. (Tamir and Cachola, 1994).

- **Awareness of cholesterol's role in cardiovascular disease.** Lack of knowledge or awareness of the role of cholesterol in CVD is especially typical of Hawaiian and Filipino Americans and among those in Southeast Asian ethnic groups. (Tamir and Cachola, 1994).

**Recommendation**
Establish prevention and education programs, and emphasize the role of cholesterol in existing CVD prevention and treatment programs. It is estimated that a 5 mg/dL drop in mean cholesterol levels produces a 4.3% drop in mortality rate. (Tamir and Cachola, 1994).

**Asian Indians**

- **Children and grandchildren of Indian immigrants are at greatest risk.** The children and grandchildren of Indian immigrants could have the highest risk for heart problems, given that their lifestyles are likely to be much more inactive than their parents'. Scientists anticipate that this phenomenon will not be visible for a few more years, however. (Lyons and Manchikanti, 2002).

**Filipinos**

- **Hypertension is poorly controlled by medicine.** In one study, only 8% of Filipino patients who took antihypertensive drugs could control their blood pressure levels. (Stavig et al., 1988).

- **Alcohol consumption** is positively correlated with elevated blood pressure levels in AAPIs, especially among the Filipino-American population. One study indicated that those whose alcohol intake was one standard deviation above the average alcohol consumption had an estimated 22.6% prevalence rate of hypertension, in contrast to a 14% prevalence rate among persons whose alcohol intake was one standard deviation below the average. (Stavig et al., 1984).

**Southeast Asians**

- **Lower treatment rates and knowledge levels.** Southeast Asians (Cambodians, Hmong, Laotians, and Vietnamese) were found to have lower hypertension treatment rates and knowledge levels compared with hypertensive subjects from other groups. (Stavig et al., 1984, 1998). Whereas 17% of Southeast Asian refugees in one sample were found to be hypertensive, only 2% were on hypertensive medication. In particular, **Cambodians and Vietnamese have the lowest hypertension awareness rates, drug treatment levels, and control rates among all ethnic subgroups in California.** (Stavig et al., 1984). A heart health study in Ohio revealed that of 94% of Cambodian, Laotian, and Vietnamese

immigrants had no knowledge of CVD, and 85% had no knowledge of prevention. (Hong and Bayat, 1999

- **Vietnamese unaware of cholesterol levels.** Based on reports from the Centers for Disease Control and Prevention, in 1992, a significant proportion of Vietnamese men (56%) and women (55%) had never had their cholesterol levels checked, compared with 41% of men and 35% of women in the mainstream. (Hong and Bayat, 1999).

*Diet and Exercise*

**Chinese**

- **Traditional versus Western diet.** Westernized Chinese are moving away from the traditional diet rich in vegetables, rice, and green tea and adopting the typical American diet that contains more animal fats—a dietary shift that may be increasing their risk of heart disease and stroke. (United Press International, 1999).

**Pertinent Fact**
There is growing recognition of the importance of physical activity in preventing CVD. Increased physical activity improves the efficiency of the heart muscle by increasing the heart's pumping capacity and increasing oxygen delivery to the tissues, both at rest and during exercise. (Tamir and Cachola, 1994).

- **Changing diet and exercise habits after immigration.** A 1994 study comparing dietary habits, physical activity, and body size among Chinese in North America and those in China found that the North American Chinese obtained a significantly higher percentage of calories from protein and fat and a lower percentage from carbohydrates. Although the majority of North American Chinese were born in Asia, the comparison group in China was leaner and more physically active than their counterpart group in North America. The authors concluded that assimilation into a Western lifestyle, along with changes in diet, physical activity, and body size, accounted for the different chronic disease rates of the two populations. (Hong and Bayat, 1999).

**Changing Behavior**
As emphasized in the Healthy People 2000 working group's recommendations, it is important to understand the cultural context and health needs of different immigrant populations to effectively change their health- and diet-related behavior. (Hong and Bayat, 1999).

**Southeast Asians**

- **Dietary changes among recent immigrants.** In a study of recently settled Southeast Asian refugee families in the US, rice remained the staple food, but foods such as steak and soft drinks were highly preferred. Within four years of arrival, 92% of the refugees reported changes in their diet, and 63% reported gaining weight (10 pounds on average). The study also found that 30% of the teenagers in these families had the major responsibility for meal

preparation, and 25% of the teenagers did most of the food shopping, pointing to the need to include this group in nutrition education programs. (Hong and Bayat, 1999).

**Pacific Islanders**

- **American Samoan diet high in cholesterol and sodium.** A community-based study of the diets of people living in the US territory of American Samoa and those in Western Samoa (renamed Samoa in 1997) reported substantial differences in nutrient intake. The intake of cholesterol and sodium was higher among inhabitants of American Samoa regardless of age, gender, education, occupation, and lifestyle. (Hong and Bayat, 1999).

**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 and obese have a substantially greater 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).

**Asian Indians**

- Asian Indians often cook with ghee (clarified butter) and fry many foods. (Kaiser Permanente, 1999).

## Adherence Factors

**Helping Clients Adhere to Treatment**

*Communicating with the patient*
As a provider, one of the most important things you can do to ensure that a patient adheres to recommended treatment is to create an atmosphere of open communication. It may be helpful to keep in mind the following points:

- Your patient needs to trust that you are acting in his or her best interests.
- Your patient should understand the purpose of the treatment and feel confident that you have used good judgment in recommending it.
- Your patient must be able to tell you when he or she does not understand something about the recommended treatment—especially when the treatment conflicts with the patient's beliefs or lifestyle.

*Involving the family*
In many cultures, an individual's health problems are considered the family's problems. The family decides what the patient will eat, when he or she will take medication, whether he or she will exercise, and when to seek medical attention. It may be seen as improper and disrespectful to exclude family members from medical interactions. For such patients, the following points

may help you to involve the family and help your patient:

- Working with the family often means working with the extended family.
- Talk to family members and the patient together about the patient's disease and treatment.
- Ask family members to provide information regarding the patient's diet, health behavior, daily activities, and types of alternative medications used.
- Involving family members in a treatment plan may help a patient adhere to the recommended treatment.

Discuss the family's decision-making patterns with the patient. If you understand and respect the complex and delicate interactions that exist among family members, you will be better able to work with family members. This allows them to be a valuable resource rather than an intrusion into your relationship with the patient.

*Working with AAPI populations*
There is tremendous diversity within the AAPI population. Decide on a case-by-case basis whether it is culturally appropriate to involve family members. Remember, it is generally *not* appropriate to use minor children as interpreters when their parents are the patients.

*Questions to ask your patients*
These questions will help ensure that your patient understands the recommended treatment and will attempt to adhere to it:

- Do you have any questions about what I have explained?
- Do you understand what I am recommending?
- Is there anything that would make it difficult to follow my recommendations?
- Is there anything that you think should be changed?
- What kind of help do you need to follow the recommended treatment?

## Adherence Factors, continued

*Communication*

- **Medical information can be overwhelming.** Giving too much medical information at once can cause misunderstanding and possibly nonadherence to treatment advice.

**Suggestion**
Pace the delivery of information. As with all your patients, try to 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).

- **Indirect communication is common.** Many AAPIs use indirect or nonverbal communication rather than simply asking for what they want. Physicians who expect their patients to speak up and say what is on their minds often miss the substance of what is being communicated. (Chin and Bigby, 2003).

**Suggestion**
Try to listen carefully and observe the indirect or nonverbal communication of your AAPI patients. This will help you understand any concerns that may interfere with their adherence to the recommended treatment.

- **Deference to authority and nonadherence.** Most AAPI cultures value deference to authority, which they may show by smiling or nodding. Patients may appear to be compliant just to please the provider, even if they disagree with what the provider is saying. The desire to please the provider can prevent patients from self-advocating, raising concerns, or fully examining their options. This can result in nonadherence. (Yu, 1999).

**Suggestion**
Have the patient explain in his or her own words what you have said. Ask the patient what help he or she might need to adhere to the recommended treatment. Provide handouts that the patient can refer to at home.

*Group Norms and Peers*

- **Strong group norms.** AAPI groups have strong group and collective norms.

**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 has support in adhering to the recommended behavior changes and medical treatment.

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