Matters of the AAPI Heart

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Introduction

• Asian Americans are the fastest growing racial/ethnic group in the United States representing 25% of all foreign born people.
• Asian Americans are classified into 7 sub groups. Asian Indian, Chinese, Japanese, Korean, Filipino, Vietnamese and Other Asian.
• Typical health surveys and questionnaires almost universally combine persons of Asian origin into one single group.
• In 2009 President of the United States signed a executive order to improve the health of AAPI by highlighting the gaps in existing research on cardiovascular disease.
### Center for Disease Control data - 2008

<table>
<thead>
<tr>
<th>Race of Ethnic Group</th>
<th>% of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Americans</td>
<td>24.5</td>
</tr>
<tr>
<td>American Indians or Alaska Natives</td>
<td>18.0</td>
</tr>
<tr>
<td>Asians or Pacific Islanders</td>
<td>23.2</td>
</tr>
<tr>
<td>Hispanics</td>
<td>20.8</td>
</tr>
<tr>
<td>Whites</td>
<td>25.1</td>
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<tr>
<td>All</td>
<td>25.0</td>
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</tbody>
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Heart Disease (Coronary Artery Disease)

- Seven major consequences of heart disease:
  - Cardiac arrest
  - Sudden death
  - Stable angina
  - Unstable angina
  - Heart attack
  - Heart failure
  - Silent heart attack
Atherosclerosis
Cardiovascular Disease
Incidence and Prevalance

• Substantial variability exists in cardiovascular risk and incidence of coronary artery disease

• AAPIs have longer “door to drug” times for acute interventions.

• Expected coronary artery bypass grafting mortality appears to be higher in Asian Americans than Caucasians.
Stroke

• Asian Americans have more severe stroke complications than Caucasians.

• Chinese Americans were found to have more hemorrhagic strokes as well as a higher prevalence of poorly controlled hypertension when compared with Caucasians.

• Stroke prevalence has been reported to decrease with duration of residence in United States among Japanese and Chinese immigrants.
Traditional Risk factors

- Genetics
- Blood pressure
- Cholesterol
- Smoking
- Diabetes
- Health habits
• Hypertension rates are higher in Filipino Americans.
• High cholesterol rates in aggregated Asian Americans are similar to the general U.S population.
• Japanese Americans have higher total cholesterol due to higher high density lipoprotein cholesterol concentration.
• Smoking prevalence is higher in Korean, Filipino and Vietnamese male population.
• Diabetes rates are higher among Asian Indians.
Insulin resistance/Type 2 diabetes

- Type 2 diabetes is a risk factor that is especially prevalent among Asian Indians.
- Higher prevalence of metabolic syndrome among Filipino and Japanese population.
- Due to higher visceral fat distribution among Filipino and Asian Indians.
Body Mass Index = Kg/meter$^2$
Differential Body Fat Distribution

• Chinese and Asian Indians have lower BMI compared with whites with similar body frames.
• WHO has made recommendations to lower BMI cut points for Asian Americans.
• A great portion of body fat for Asian Americans is distributed centrally in metabolically more visceral deposits.
• Other measures include waist circumference, waist to hip and trunk to total height distribution.
Treatment Options

• Medications
  - Aspirin and Plavix
  - Blood pressure
  - Diabetes
  - Cholesterol
  - Blood thinners

• Angioplasty and stent placement
• Coronary artery bypass grafting (CABG)
Medication effects

• Differences in therapeutic drug response.
• Chinese patients respond to blood pressure medications more than their white counterparts.
• Asian Indians require higher doses of blood thinners than Chinese.
• Chinese and Japanese have high sensitivity and Asian Indians demonstrate intermediate sensitivity to cholesterol medications compared with non-Hispanic whites.
Angioplasty stents
Coronary Artery Bypass

Cholesterol build-up
Sites of Blockage
Aorta
Internal mammary artery bypass
Saphenous vein bypass
Coronary Artery Disease

- Higher rates of hospitalization for Ischemic heart disease have been shown in Asian Indians (RR=3.7) and lower rates in Chinese (RR=0.6)
- Male Asian Americans less likely to undergo PCI and more likely to undergo CABG than Caucasians.
- Expected rate of CABG mortality higher in Asian Americans.
- Significant mortality in younger Asian Indian population compared with other racial/ethnic groups
Diet-East Asian

• Lower in total and saturated fats
• Less animal protein
• Rice
• Vegetables
• Tea
• Garlic
• Red yeast rice
• Sodium
Diet-Asian Indian

- Saturated fats
- Clarified butter
- Hydrogenated oils
- Coconut products
- Refined Carbohydrates
Acculturation and health behaviors

• The process by which a foreign born person adopts the values, customs and behaviors of their new environment.

• CAD and stroke mortality rates in Hawaii were intermediate between high stroke rates in Japan and high heart attacks in California which goes along with blood pressure and cholesterol levels.

-The Ni-Hon-San study
Risk factor trends

• Recent Chinese immigrants report healthier diet and physical activity than those resided in United States > 10 years
• Chinese men don’t adhere to taking blood pressure medications the longer their length of stay in US
• US life style is associated with more physical activity among Korean Americans but with less physical activity among Japanese Americans.
• Alcohol abstinence rates are variable – Vietnamese at 68%, Japanese at 37% and Asian Indian at 56%.
• Among the Korean Americans men smoked less and women smoked more
• Men had higher BMI and women did not.
Naturoceutical Products

- Soy protein and iso-flavones lower cholesterol
- Fatty fish - salmon and mackerel rich in omega-3 fatty acids
- Seafood consumption is higher in Asian Americans compared to US general population
- The fish consumption decreased among subsequent generations
- Red yeast rice extract showed positive effects on all the components of cholesterol
Red yeast rice
Naturoceutical Products

- Black tea has positive effects on cholesterol and blood pressure
- Green tea has flavonoids which are anti-oxidants, anti-inflammatory and anti-thrombogenic
- More than 7 cups of green tea/day lowers the incidence of stroke
- Moderate drinking reduces atherosclerosis
Physical Inactivity

- Physical inactivity is reported more among Asian Americans than Whites, Hispanics and African Americans.
- Higher prevalence of obesity, insulin resistance and hypertension.
- Intervention studies suggest CVD risk factors can be favorably modified.
Emerging risk factors

- Lipoprotein Lp(a) is an independent risk factor for CVD.
- Higher Lp(a) levels have been reported in Asian Indians compared with other Asian populations and whites.
- Coronary Artery Calcification: Asian Indians had higher median CAC scores compared with whites.
- Chinese Americans had lower CAC scores than non-Hispanic whites, but higher scores than Hispanics and blacks.
- Genetics
What can you do for a Healthy Heart?

- Genetics
- Blood pressure
- Cholesterol
- Smoking
- Diabetes
- Health habits
Thank you!