Introduction to Sudden Cardiac Death: What is the scale of the problem?

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Marc Vivien Foe of Cameroon taken off the field during the 2003 semifinal Confederations cup football match. He died later that night- an autopsy later showed hypertrophic cardiomyopathy.
SCD- statistics I

- Sudden Cardiac Arrest (SCA) is a leading cause of death in developed countries
  - Approx. 325,000 die suddenly in the US each year
  - SCA kills 1,000 people a day (one person every two minutes)
- 95% of victims of SCA die before they reach a hospital or other source of emergency help.

Source: Heart Rhythm Society
SCD - statistics II

- SCA most often occurs in patients with heart disease
  - Especially pts with CHF or previous MI
  - 75% of SCD victims have had a previous MI
- The proportion of out-of-hospital SCA increases with age
  - 5.8% in persons 0-4 yrs to 61.0% in persons aged >85 yrs
- No. of SCD cases increased 10% (from 2,719 in 1989 to 3,000 in 1996) in people between the ages of 15 and 34.
  - In young women, the death rate from SCA has increased 30%.

Source: AHA Heart Disease and Stroke update 2010
Over the past 10 years, the incidence of SCD in Singapore has increased steadily from 26 per 100,000 population in 1998 to 34 in 2007.

- Mainly due to increasing proportion of elderly.

- Of the 1538 cases of sudden cardiac deaths in 2007, 67% were above 60 years of age. Less than 3% were below 35.

Overall, the SCD incidence in Singapore (about 1 in 3000) is low as compared to other developed countries.

- US 1 in 600
- Europe 1 in 1250

- Chances of surviving an out-of-hospital cardiac arrest is 2-4%

Source: MOH, NHCS/ SGH data
Classification of SCD according to aetiology

Inherited heart rhythm disorders
- e.g. Brugada syndrome, LQTS, WPW
- Often genetic
- May present early or picked up on routine ECG

Cardiomyopathies
- e.g. HCM, ARVC
- Often genetic
- May present early or picked up on routine ECG

Structural heart disease
- e.g. aortic stenosis, anomalous coronary arteries (rare)

Coronary artery disease
- AMI
- VT/VF due to cardiac scar from prior MI
- Poor LV function

More likely cause with increasing age
Strategies to decrease SCD

Greater awareness and education:
• Lifestyle - exercise, weight
• Diet
• Seek medical attention early if symptomatic

Target pts at highest risk:
• IHD and CHF pts
• Aggressive medical management of RFs
• Closer follow up
• ICD if indicated

Earlier access to EMS

Greater awareness of public to CPR
• Better access to AED

Screening of public(?)
• Young athletes?
• ECGs/ Medical assessment?
• Middle aged/ older pts
Take home points

- Definite trend to SCD
  • Older patients
  • Pre-existing cardiac disease (CHF/ previous MI)
- Better strategy is to try to prevent cardiac arrest
  • Still v. poor survival with out-of-hospital cardiac arrest
  • Identify pts at highest risk
- SCD does occur in young patients with no known cardiac problems
  • Much less common
  • Usually clues are present (from history, ECG)
Thank you
Any Questions
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<tr>
<th>Time</th>
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<th>Presenter</th>
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<td>1410hrs</td>
<td>Which patients with coronary artery disease are at greater risk and what can we do to lower the risk?</td>
<td>Dr. Stanley CHIA</td>
<td>Consultant, NHCS</td>
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<td>1430hrs</td>
<td>Sudden Cardiac Death in patients with heart failure</td>
<td>Dr. David SIM</td>
<td>Associate Consultant, NHCS</td>
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<td>1450hrs</td>
<td>Risk stratification for Sudden Cardiac Death in athletes and apparently healthy individuals</td>
<td>Dr. CHING Chi-Keong</td>
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<td>Tea-Break</td>
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<td>Use of cardiac imaging to assess the risk of Sudden Cardiac Death</td>
<td>Dr. TAN Swee-Yaw</td>
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<td>Interesting Cases – Presented by Dr. Daniel CHONG</td>
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<td>Panel Discussions and Questions</td>
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