sudden cardiac death

- arbitrarily defined as death from a cardiac cause within 1 hour of symptom onset or without preceding symptoms
- sudden cardiac death can occur without previously identified heart disease; however, the strongest predictors are severity of left ventricular dysfunction
- large trials of ICD therapy have focused on patients with LV dysfunction, coronary disease & spontaneous or inducible ventricular arrhythmias

non-device therapy for prevention of sudden cardiac death

- general:
  - antiarrhythmics retain a primary role among patients with a low risk of death
  - among high risk patients they are often used as an adjunct to ICD therapy
  - revascularisation is of primary importance in patients with coronary artery disease

medication trials:
(i) flecainide (Ic antiarrhythmic) is effective in suppression of ventricular ectopy but was shown to significantly increase mortality in the landmark Cardiac Arrhythmia Suppression Trials (CAST)
(ii) sotalol (which also has Ic properties) has also been evaluated in a randomised controlled trial and been shown to increase mortality
(iii) amiodarone has been shown to decrease the total, cardiac & sudden cardiac death rate among patients at risk of arrhythmogenic death
(iv) beta blockers clearly reduce the risk of death among patients with recent myocardial infarction & LV dysfunction
(v) statin use has been associated with a lower risk of sudden death in several studies

lifestyle factors:
- tobacco avoidance, exercise, moderate alcohol consumption & a diet rich in fish are all protective from sudden cardiac death

implantable defibrillators

1. ischaemic heart disease:
   - acute myocardial ischaemia
   - old myocardial infarction scar
2. non-ischaemic heart disease:
   - cardiomyopathy
   - valvular heart disease
   - congenital heart disease
   - ventricular hypertrophy
   - cardiac trauma
3. no apparent structural heart disease:
   - primary electrical disease
   - electrolyte abnormalities
   - prolonged QT syndromes
   - drugs

pathophysiology

1. arrhythmic causes:
   - causes of sudden cardiac death can be divided into three categories:
   1. primary VT / VF (most common)
   2. primary SVT with a very rapid ventricular response
   - usually associated with the development of AF or flutter in the presence of an accessory AV connection
   3. bradycardia or asystole
   - usually the result of an inadequate escape pacemaker mechanism associated with either a high degree AV block or severe sinus node dysfunction

aetiology

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