**Coronary Artery Bypass Grafting Indications**

* Over 50% stenosis in the presence of:
  + Severe angina which is unresponsive to medical therapy
  + Marked ST depression of exercise ECG
  + Left main stem stenosis
  + Severe triple vessel disease
  + Angina with left ventricle dysfunction

**Types of Angina**

* **Stable Angina:** induced by effort, reduced by rest
* **Unstable (Crescendo) Angina:** increasing frequency or severity occurring on minimal exertion or at rest. Associated with a risk of MI
  + Can show **T wave Inversion / ST segment depression**
* **Decubitus angina:** precipitated by lying flat
* **Variant (Prinzmental Angina):** caused by coronary artery spasm with pain usually occurring at rest. ECG during pain shows **ST Segment elevation.**
* Beta blockers to be avoided in these patients as they can increase vasospasm

**Diagnosis**

**Definition of anginal pain:**

* Constricting discomfort in the front of the chest, or in the neck, shoulders, jaw or arms
* Precipitated by physical exertion
  + *Can also be precipitated by emotion, cold weather, heavy meals*
* Relieved by rest or GTN in about 5 minutes

*Patients with 2 of the above features have atypical angina*

*Patients with 1 or none of the above features have non-anginal chest pain*

For patients in whom stable angina can not be excluded by clinical assessment alone, NICE recommend:

1. CT coronary angiography
2. Non-invasive functional imaging looking for reversible myocardial ischaemia i.e. Myocardial perfusion scintigraphy with single photon emission computed tomography (MPS with SPECT), stress echocardiography, first pass contrast enhance MR perfusion or MR imaging for stress induced wall motion abnormalities.
3. Invasive coronary angiography

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The 3 H’s of Nitrates

Nicorandil Heads Anal Flushes

Calcium Heads Flush Ankles

BETA MALES ARE TIRED, COLD AND ASTHMATIC

**Management**

**Conservative: Manage D CASES**

**D**iet, **C**affeine, **A**lcohol reduction, **S**moking quit, **E**xercise and weight loss, **S**alt reduction

**AS BCG NNIR:**

* **A**spirin and **S**tatin
* **B**eta blocker / **C**alcium channel blocker – 1st line
  + B-Blocker i.e. **Atenolol** 
    - Do not use in patient with severe asthma, COPD, LVF, Bradycardia, Coronoary artery spasm
  + If CCB only: **Verapamil / Diltiazem** 
    - Verapamil + B blocker can cause heart block
  + If CCB and B blocker: **MR Nifedipine**
    - Use both if each individually are not controlling the symptoms – 2nd line
* **G**TN for episodes (Sublingual) – if first dose doesn’t work, take second in 5 minutes
* **N**itrates i.e. **Isosorbide Mononitrate / N**icorandil **/ I**vabradine / **R**anolazine **–** 3rd line
  + Nitrate tolerance and reduced efficacy in long term users.
  + To avoid this – Nitrate free time of 10 – 14 hours (if taking BD)
  + Ivabradine acts on the funny ion current expressed in SA NODE reducing cardiac pacemaker activity 🡪 SE: Luminous phenomena, headache, bradycardia
  + Nicorandil: K channel Activator
* Only add a third drug while patient awaiting assessment for PCI or CABG

THE 3 H’S OF NITRATES

NIC HEADS ANAL FLUSHES