Appendix 6. Assessment of Ischaemic Heart Disease

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Patients with stable coronary artery disease on appropriate medication having major or minor surgery have similar outcomes to the general population.

Those with unstable symptoms and/or associated heart failure are at significantly increased risk especially if major surgery is planned.

Pre-operative assessment must include key considerations when assessing patients for Ischaemic Heart Disease (IHD):

There are five important questions to answer when assessing patients for IHD.

<table>
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<th>Is the Diagnosis of IHD likely?</th>
<th>A diagnosis of IHD is more likely in patients with:</th>
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<tr>
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<td>• Abnormal ECG (left ventricular hypertrophy, left bundle-branch block, ST-T abnormalities)</td>
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<td>• Rhythm other than sinus (e.g., atrial fibrillation)</td>
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<td>• Non-insulin dependent diabetes mellitus</td>
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<td>• Poorly controlled systemic hypertension</td>
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<td>• History of stroke</td>
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<td>• Smoker</td>
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<td></td>
<td>• Hypercholesteraemia</td>
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<td>• Renal insufficiency (serum creatinine ≥ 180µmol/l)</td>
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<td>• Advanced age (≥ 75 yrs)</td>
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<tr>
<th>Is the IHD stable?</th>
<th>Patients with <strong>unstable IHD</strong> will usually need their surgery delayed and may need further investigation (either by exercise ECG, stress echo).</th>
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<td><strong>These patients should be discussed with the anaesthetist on duty and their cardiology team</strong></td>
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### MARKERS OF STABLE CORONARY ARTERY DISEASE

- mild stable angina pectoris (CCS class 1 or 2)
- previous MI by history or ECG without current symptoms
- six months after CABG, Percutaneous Coronary Intervention (PCI), or bare metal stent (BMS) with good symptom control

### MARKERS OF UNSTABLE CORONARY ARTERY DISEASE

- < 6 weeks after MI, PCI, BMS, CABG
- < 6 months after MI, PCI, BMS, CABG if complications or current symptoms
- < 12 months after a drug eluting stent
- (DES) or > 12 months if high risk DES
- Unstable or severe angina (CCS class III or IV)
- Symptoms of decompensated heart failure (NYHA class III or IV)
- Clinical ischaemia and symptomatic arrhythmias (ventricular or supraventricular)

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**Are patients on correct medication?**

Patients with IHD should usually be on a combination of drugs for secondary prevention. These will usually include a cholesterol lowering drug (Statin) and anti platelet drugs (either aspirin, clopidogrel, or combined aspirin and clopidogrel). B Blockers, ACE inhibitors, nitrates, diuretics and other antihypertensives are common place.

Patients with suspected coronary artery disease who are not on drugs for secondary prevention (principally aspirin, statin) should be discussed.

See separate guidelines for management of patients on anti-platelet drugs for non-cardiac surgery.

In general all cardiac medications should be continued up to and including the day of surgery.

If in doubt please consult the anaesthetic clinic.
Have all appropriate investigations been undertaken?

A current resting ECG should be available on all.

Patients with stable disease and good functional capacity all require FBC and U+Es prior to any surgery.

Patients with unstable disease need discussion as previously outlined.

Is there evidence of cardiac failure / poor exercise tolerance?

Patients with poorly controlled or undiagnosed heart failure are at significantly increased risk. Patients with poor exercise tolerance should be considered to have heart failure until proven otherwise.

Please discuss all of these patients with the consultant anaesthetist clinic especially if major surgery is planned.

GRADING OF ANGINA PECTORIS BY THE CANADIAN CARDIOVASCULAR SOCIETY CLASSIFICATION SYSTEM

Class I
Ordinary physical activity does not cause angina, such as walking, climbing stairs. Angina (occurs) with strenuous, rapid or prolonged exertion at work or recreation.

Class II
Slight limitation of ordinary activity. Angina occurs on walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, or in cold, or in wind, or under emotional stress, or only during the few hours after awakening. Angina occurs on walking more than 2 blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and in normal condition.

Class III
Marked limitations of ordinary physical activity. Angina occurs on walking one to two blocks on the level and climbing one flight of stairs in normal conditions and at a normal pace.

Class IV
Inability to carry on any physical activity without discomfort—anginal symptoms may be present at rest.

New York Heart Association (NYHA) classification of heart failure

Class I
Cardiac disease but without resulting limitation of physical activity Ordinary physical activity does not cause undue fatigue, palpitation, dyspnoea or anginal
pain.

Class II
Cardiac disease resulting in slight limitation of physical activity Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnoea or anginal pain.

Class III
Cardiac disease resulting in marked limitation of physical activity Comfortable at rest. Less than ordinary physical activity results in fatigue, palpitation, dyspnoea or anginal pain.

Class IV
Cardiac disease resulting in inability to carry on any physical activity without discomfort
Symptoms of cardiac insufficiency or of anginal syndrome may be present even at rest. If any physical activity is undertaken discomfort is increased.