Dilated cardiomyopathy

a) How could a patient with dilated cardiomyopathy (DCM) present? (3 marks)
   • The low cardiac output state presents with tachycardia and
   • Dyspnoea, ascites, and peripheral oedema can develop.
   • Valvular regurgitation and arrhythmias can occur.
   • Embolic events may also be a feature.
   • There is combined systolic and diastolic dysfunction and elevated left ventricular end diastolic pressures (LVEDP).

b) What are the pharmacological (3 marks) and non-pharmacological management options for a patient with DCM? (2 marks)
   a) Pharmacological: includes
      1. Angiotensin-converting enzyme inhibitors (ACEIs), Angiotensin II inhibitors, and
      2. Diuretics,
      3. b-blockers, spironolactone,
      4. digoxin.
      5. Anticoagulants
   b) Non pharmacological:
      1. Biventricular pacing,
      2. Partial left ventriculectomy
      3. Left ventricle assist devices
      4. ICD
      5. Heart transplant

c) List the predictors of poor outcome in patients with DCM undergoing surgery? (2 marks)
   • Left ventricle ejection fraction <20%
   • Elevated left ventricle end-diastolic pressure (LVEDP)
   • Left ventricle hypokinesia
d) What are the haemodynamic goals when anaesthetising patients with DCM? (4 marks)

The overall aims of anaesthesia are to:

- avoid tachycardia;
- avoid/minimize the effects of negative inotropic agents, in particular anaesthetic drugs;
- prevent increases in afterload;
- maintain adequate preload in the presence of elevated LVEDP.

e) What measures would you take to achieve these haemodynamic goals during anaesthesia? (6 marks)

- Local and regional anaesthesia techniques: Central neuraxial blockade and peripheral nerve blocks
- General anaesthesia: Balance anaesthetic technique with propofol, etomidate and opioids. Avoid ketamine
- Monitoring: Arterial and central venous catheters, (TOE), BIS
- Cardiovascular support: Inotropic support such as phosphodiesterase inhibitors, levosimendan, dobutamine, and dopamine. Noradrenaline can be used to treat hypotension. Biventricular pacing and intra-aortic balloon pump may be considered
- Postoperative care: transferred to an intensive care unit. Adequate analgesia