Anaesthetic considerations for patients with coronary artery disease

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The discovery that a patient scheduled for anaesthesia and surgery is one ofthe high risk population with coronary artery disease has become an everydayhappening in the life of anaesthetists. The significance of this issue is that thesepatients are vulnerable to considerable haemodynamic and catecholamine changesjeopardizing their delicate myocardial supply/demand balance when undergoinganaesthesia and surgery.An appreciation of the normal blood supply to the myocardium, together withthe physiologic variables influencing it, is essential to the understanding of thepathophysiology of myocardial ischaemia especially the issue of myocardialsupply/demand ratio and factors affecting it. A disturbance of this delicate balancemight endanger the patient of developing ischaemia in relation to anaesthesia andsurgery. In patients who had developed myocardial infarction, a time chance mustbe allowed for the myocardium to develop proper collateral circulation as well asproper healing of the infarcted area. Thus, elective procedures should be delayed forat least 6 months following an infarction, and hypoxia or cardiovascular instabilityshould be avoided during anaesthesia and postoperatively.Preoperative evaluation of the patient should point out the risk factors that mightinterfere with a smooth anaesthesia either in the intraoperative or postoperativeperiod. Points that should be assessed thoroughly include the presence of an intervalfrom a previous myocardial infarction, cardiac reserve, congestive heart failure,angina pectoris, preoperative hypertension, diabetes mellitus and lastly the site andtype of surgery and its anticipated duration. Other aspects of the preoperativepreparation of the patient should include the estimation of the patient’s cardiacperformance together with treatment of any noncardiac disease to prepare the patientin the best possible condition to withstand the perioperative period. For patients withCAD requiring anaesthesia for a noncardiac procedure or for CABG, premedicationshould aim at abolishing anxiety with its deleterious haemodynamic effects puttingin mind the patient’s cardiac performance and its affection by the drugs used forpremedication.. Induction and maintenance of anaesthesia should be carried out with techniquesthat are least hazardous to the haemodynamic stability of the patient. The use ofnon-narcotic i.v. anaesthetics, narcotic anaesthetics and/or inhaled anaesthetics forinduction and maintenance of anaesthesia in such patients should be balanced andguided by the patient’s left ventricular function as well as the circulatorypharmacodynamics of the agent used. Also, choice of muscle relaxants should beguided by their haemodynamic effects to

avoid any increase in oxygen demandcaused by the non preferred effects of muscle relaxants such as tachycardia,. hypotension or hypertension.Regional anaesthesia is recommended for operations of the extremities,transurethral prostatic resection, ophthalmic procedures as well as for emergencyprocedures following a recent myocardial infarction provided that these regionaltechniques are handled by an expert anaesthetist.The postoperative period can be stressful, due to the onset of pain duringemergence from anaesthesia, fluid shifts, temperature changes and alteration ofrespiratory function. These stresses place the patient at increased risk for. development of adverse cardiac outcome. So, patients with CAD must be monitoredand put under observation in the ICU for 72 hours postoperatively with managementof any complication that might occur in the postoperative period.