Introduction and Aim of the work

Introduction

Cardiovascular disease are the most common cause of perioperative morbidity and mortality.

Over the last thirty years, many studies have attempted to individuate the determinants of cardiovascular morbidity in surgical patients *(Bigatello, 2001)*.

The main results of these studies are that the single most important and potentially reversible risk factor for mortality and cardiovascular morbidity is the presence of perioperative myocardial ischemia *(Goldman et al., 1995)*.

The patient with coronary artery disease is clinically presented by one of six presentations: unstable angina, stable angina with 50-75% occlusion in the coronary circulation, lethal or dangerous dysrhythmias, ventricular failure (ischemic cardomyopathy), myocardial infarction and sudden death, 50% of cases of sudden death have unexpected IHD, high risk of complications especially during first 48 hours after surgery *(Mangano et al., 1992)*.

The cause of ischemia is imbalance between myocardial oxygen supply and demand and mismatch occurs during sympathetic activation as in situations of surgery and stress *(Nabel et al., 1988)*.

Indeed, it is suggested that about 90% of new myocardial ischemia observed during anaesthesia is the manifestation of silent ischemia that is

also present before the operation. Anxiety reduction requires both psychological and pharmacological approaches *(Morgan et al., 2002).*

Among the estimated 25 million patients in the United States undergoing surgery each year 7 millions are considered to be at high risk of IHD *(Goldman et al., 1995).*

The patient with coronary artery disease may have many complications. Thus it is important to evaluate them preoperatively, by history, physical examination, specialized studies to know the contractile function of the heart *(Cahlan, 1988).*

Preoperative preparation to general anesthesia including sedation and antiemtics, antisialagoges and antianginal drugs as beta blockers, calcium channel blockers, nitrates.

Intraoperative management include the choice of anesthesia either general or regional. General anesthesia have a benefit on controlling patient hemodynamics, however, regional anesthesia have a benefit of controlling postoperative pain by giving topup doses in epidural catheter *(McConachie et al., 1995).*

Ischemic heart diseased patients must be completely monitored during any type of anesthesia by ECG, continuous blood pressure monitoring, and the usage of oxygenation monitoring, TEE, capnography, temperature monitoring if possible. Pulmonary artery pressure, central nervous system monitoring should used in operations with suspected major blood loss as Aortic artery operations *(Morgan et al., 2002).*

Many complications of ischemia during anesthesia can occurs as hypotension, bleeding tendency in patients receiving anticoagulants (as aspirin, low molecular weight heparins (LMWHS), heparin oral anticoagulants) anxiety and over sedation during regional anesthesia.

Complications of ischemia may be difficult to be diagnosed and need the sense of anesthesiologist to diagnose them as early as possible *(Charlson et al., 2003).*

Postoperative problems occur frequently during first 48 hours as pain induce tachycardia and hypertension. Thus patient must be monitored *(Ellis, 2003).*

Discharge of ischemic patient after a proper management without complications is a nice goal for anesthesiologist to reach.

Aim of the work

The essay is aiming at discussion of the following points:

1. Physiology and anatomy of coronary circulation.

2. Pathophysiology of myocardial ischemia.

3. Preoperative anesthetic management of ischemia heart diseased patients.

4. Intraoperative management of ischemic heart diseases patients.

5. Intraoperative monitoring.

6. Postoperative anesthetic management of patients with ischemic heart disease.