The Preoperative Medical Evaluation of Surgical Patients

Rolf A.Streuli M.D., MACP, FRCP, Switzerland

Honorary President, International Society of Internal Medicine

In preoperative evaluation of surgical patients the medical consultant has the following tasks: (1)He has to evaluate the patient's current medical status, (2) to provide a clinical risk profile, (3) to decide, whether further tests are indicated prior to surgery, (4) to optimize the patient's medical condition in an attempt to reduce the risk of complications.

The prerequisites for a successful medical consultation are (1)the knowledge of medical illnesses that influence the surgical risk, (2) understanding of the surgical procedure, (3) integration of a management plan, (4)an effective communication and interaction with the members of the preoperative team.

The American Medical Association's (AMA) nine ethical principles for medical consultations are: (1) consultations are indicated on request in doubtful or difficult cases, or when they enhance the quality of medical care, (2) consultations are primarily for the patient's benefit, (3) a case summary should be sent to the consulting physician, (4) one physician should be in charge of the patient's care, (5) the attending physician has overall responsibility for the patient's treatment, (6) the consultant should not assume primary care of the patient without consent, (7) the consultation should be done punctually, (8)discussions during the consultation should be with the referring physician, and with the patient only by prior consent of the referring physician, (9) conflicts of opinion should be resolved by a second consultation or withdrawal of the consultant.

The "operative risk" is the probability of an adverse outcome or death associated with surgery and anesthesia. It can be divided into the following four components: (1) patient-related, (2) procedure-related, (3) provider-related, (4) anesthetic-related.

Before surgery is started, the following questions have to be answered: (1) What is the status of the patient's health? (2) If there is evidence of a medical illness, how severe is it, and does it affect or increase operative risk? (3) How urgent is surgery? (4) If surgery is delayed, will medical illness be improved by treatment? (5) If surgery cannot be delayed, what has to be done in the patient's management?

The six independent predictors of complications in the revised cardiac risk index are: (1) high-risk type of surgery,(2) history of ischemic heart disease, (3) history of congestive heart failure, (4) history of cerebrovascular disease, (5) preoperative treatment with insulin, (6) preoperative serum creatinine $>180\ \mu mol/l$.

Major risk predictors of increased perioperative cardiovascular risk are: (1) unstable coronary syndromes, (2) decompensated heart failure, (3) significant arrhythmias, (4) severe valvular disease. Intermediate risk predictors are: (1) mild angina pectoris, (2) previous myocardial infarction, (3) compensated or prior heart failure, (4) diabetes mellitus, (5) renal insufficiency. Minor risk predictors are: (1) advanced age, (2) abnormal ECG, (3) rhythm other than sinus, (4) low functional capacity, (5) history of stroke, (6) uncontrolled systemic hypertension.

Postoperative pulmonary complications: (1) atelectasis, (2) pneumonia, (3) respiratory failure, (4) acute respiratory distress syndrome, (5) pleural effusion. Risk factors for postoperative pulmonary complications: (1) advanced age (>60 years), (2) low serum albumin, (3) dependent functional status,

(4) obesity (BMI $>27\ kg/m^2$), (5) weight loss (>10 kg in 6 months), (6) COPD history, (7) tobacco use, (8) sputum production, (9) pneumonia, (10) dyspnea, (11) obstructive sleep apnea.

Risk factors for postoperative acute renal failure: (1) volume depletion, (2) hypotension, (3) sepsis, (4) nephrotoxin exposure (contrast media, NSAIDs, ACE-I, aminoglycosides), (5) obstructive jaundice, (6) pre-existing chronic kidney disease.

Risk of surgery in patients with liver cirrhosis: Postoperative mortality is 10% in Child's class A, 30% in Child's class B, and 80% in Child's class C.

Surgery in patients with bleeding disorder. How many platelets do we need to do safe surgery? For low risk surgery: $>50{,}000/\mu l$; for moderate risk surgery: $>75{,}000/\mu l$; for high risk surgery: $>100{,}000/\mu l$.

Preoperative management of anticoagulated patients: For elective surgery with low or moderate risk of bleeding aim to INR <2.5; for elective surgery with high risk of bleeding aim to INR 1.0 Two units of Fresh Frozen Plasma (FFP) will correct a therapeutic INR to within a level safe for surgery.