

Preoperative assessment of the geriatric patient with cardiac disease undergoing noncardiac surgery

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Geriatric population is increasing among the patients undergoing noncardiac surgery. Because the life expectancy is increasing there is an increased demand for surgery in this patient group. Age as such is not a good predictor of surgical risk, but elderly patients have more comorbidities and their functional reserve is reduced/limited. These patients have longer hospital stays and experience more cardiac and pulmonary related complications especially after major surgeries. Therefore, risk assessment and risk modifications are essential to prepare proper management for the geriatric cardiac patients.

The clinical predictive factors can be major, intermediate or minor depending on the severity of the coexisting cardiac disease (AHA practice guideline 2002) (1). The risks are related to the type of surgery as well. The risks can be classified based on major, moderate and minor surgery (John's Hopkins classification).

Incidence of coronary artery disease and valve disease (Aortic stenosis, mitral regurgitation) increases with age and they are the most common cardiac disease in older population. If the patient has a history of stable coronary artery diseases, with good functional reserve, risk for cardiac complications is low. The RCRI score (Lee index) is a good tool for prediction of cardiac morbidity (2). If the patient has more than 3 risk factors, risk of cardiac adverse events is >9%. If the patient has chest pain during physical stress (NYHA III), it is recommended to preoperatively evaluate the patient's coronary status by stress test and dipyridamole thallium imaging, echocardiography and coronary angiography if the other tests reveal ischemia. If the patient is scheduled for major vascular or abdominal surgery, a risk for cardiac related complication is high. If the patient has a history of smoking, COPD, diabetes and PVD the cardiac risks are even higher. Patients with previous PCI and coronary stents should be carefully assessed with special attention on the discontinuation of the dual antiplatelet therapy. Special issue is the patient with DES applied in less than a year from planned surgery. Elective surgery is not recommended in 12 months after DES implantation (3). Dual antiplatelet therapy is not recommended to be discontinued in one year after DES implantation due to increased risk of late stent thrombosis (4).

It is important to evaluate the history of coexisting diseases and symptoms during the preoperative visit. If the patient reports dyspnea, dysrhythmias, collapses, it is recommended to evaluate the cardiac status carefully. Physical examination with auscultation of the heart and lungs is one of the basic studies. If there is a systolic murmur or signs of congestion, ECG, thorax X-ray and echocardiography are necessary (5). If there is a suspicion of aortic stenosis, cardiologist should be consulted. Older patients have often asymptomatic aortic valve stenosis and LVH. If the patient has other valve disease (AI, MS, MI, TI, TS) he /she should have preoperatively cardiologist consultation.

Older women have often asymptomatic diastolic dysfunction. Patients report only shortness of breath and dyspnea under physical stress. If the patient has both systolic and diastolic dysfunction with decompensation, elective surgery should be postponed and cardiologists consulted.

Older patients have frequently atrial fibrillation. If the patient is under anticoagulant therapy and heart is compensated, then the coumadin (warfarin) can be discontinued and bridged by LMWH. If the patient does not know having AF and is not under anticoagulant therapy, a cardiologist should be consulted about the possibility to do a cardioversion and/or start anticoagulant therapy.

If the patient has II or III degree AV block there should be always a possibility for temporary pacing. Patients with low heart rate and II- III degree AV block should go first to cardiologist check-up. Also patients with pacemakers and ICD should go for cardiologist evaluation preoperatively. Older patients have often decreased memory function and may have dementia. Postoperative cognitive dysfunction is common among older cardiac patients and they often experience delirium postoperatively. It will delay the hospital stays. Anaesthesia plan must be made carefully (local/regional/ general anaesthesia). Family members should be informed about the risks of postoperative cognitive dysfunction.

Older patients have more cardiac related risk factors. The preoperative assessment should focus on the evaluation of the cardiac risks and on the modification of the risks with betablockers(6,7) and statins and also with interventional cardiology methods (PCI, stenting) or cardiac surgery. Postoperative cognitive dysfunction and delirium is also common among older patients. Preoperatively the invasiveness of the surgery should be taken into consideration. The quality of life expectations of the patient are also important. Is the patient able to return home and have the same physical and mental status after surgery than preoperatively.

Preoperative clinics should evaluate the geriatric patients with cardiac disease very carefully by consulting cardiologists to diagnose and treat the cardiac disease with the best possible strategies and to modify -and lower the cardiac risks perioperatively.

All the decisions- to operate or not- or to modify the surgical procedures should be made in collaboration with surgeons based on the evidence based guidelines and practice advisories and local hospital recommendations.

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