Perioperative Use of β-Blocker Therapy in Patients Undergoing Noncardiac Surgery

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The questions below are based on the article "Perioperative Use of β-Blocker Therapy in Patients Undergoing Noncardiac Surgery," which begins on page 19 of this issue. Choose the single best answer for each question.

1. Perioperative use of β-blocker therapy is indicated in all of the following patients except:
(A) A 75-year-old man with a history of coronary artery disease (CAD) and uncontrolled hypertension who is undergoing exploratory laparotomy for abdominal mass
(B) A 55-year-old man with well-controlled hypertension who is scheduled for nephrectomy for renal mass
(C) A 72-year-old man with a history of paroxysmal atrial fibrillation who is scheduled for hip arthroplasty
(D) An 80-year-old man with a history of CAD and stable angina who is undergoing emergency surgery for acute intestinal obstruction
(E) An 85-year-old woman with type 2 diabetes mellitus on insulin who is scheduled for elective gall bladder surgery

2. An 85-year-old man with a history of CAD, uncontrolled hypertension, and type 2 diabetes for which he takes insulin is scheduled for carotid endarterectomy. Dobutamine stress echocardiogram shows a fixed myocardial perfusion defect with a left ventricular ejection fraction (LVEF) of 35%. The patient's medications include labetalol 100 mg twice a day, lisinopril 20 mg/d, and atorvastatin 40 mg/d. What changes should be made to optimize this patient's medical management to reduce perioperative cardiac mortality and morbidity?
(A) Add metoprolol or atenolol preoperatively
(B) Discontinue labetalol and start atenolol preoperatively
(C) Discontinue labetalol and start metoprolol preoperatively
(D) Continue labetalol and make no changes
(E) Continue labetalol and adjust dose to control blood pressure and to achieve a heart rate less than 70 bpm

3. A 72-year-old woman with a history of mild to moderate chronic obstructive pulmonary disease (COPD), CAD, and paroxysmal atrial fibrillation is scheduled for resection of a colonic mass suspicious for malignancy. What step should be taken to reduce perioperative cardiac complications?
(A) Start low-dose atenolol or metoprolol by mouth preoperatively
(B) Start diltiazem for prevention of postoperative atrial fibrillation
(C) Do not give β-blocker therapy as it is contraindicated in a patient with COPD
(D) Do not use prophylactic treatment as the patient's medical condition is stable
(E) Do not recommend surgery as patient is high risk for surgery

4. A 65-year-old man with history of peripheral vascular disease is undergoing emergency exploratory laparotomy for perforated bowel. The patient's medical history is significant for CAD and congestive heart failure with a LVEF of 40%. He underwent a coronary artery bypass grafting procedure 5 years ago and has had frequent angina for the last 3 months. Physical examination shows a blood pressure of 160/90 mm Hg and a heart rate of 94 bpm. What is the next step in preoperative medical management of this patient?
(A) Give atenolol or metoprolol by mouth preoperatively and titrate to achieve a heart rate less than 70 bpm

For answers, see page 27.

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(B) Give atenolol or metoprolol intravenously preoperatively and titrate to achieve heart rate less than 70 bpm
(C) Give calcium channel blocker for blood pressure control
(D) Give angiotensin–converting enzyme inhibitor for better control of blood pressure
(E) Patient requires emergency surgery; recommend to proceed with surgery without further treatment

5. The patient in question 4 has tolerated the surgical procedure well. What adjustments should be made to his β-blocker regimen postoperatively?
(A) β-Blockers are not needed postoperatively; discontinue immediately
(B) Discontinue β-blocker after 5 days
(C) Discontinue β-blocker 48 hours after surgery
(D) Continue intravenous β-blocker postoperatively until discharge
(E) Continue β-blocker postoperatively for 30 days and change to oral when appropriate

6. A 72-year-old woman with severe, steroid-dependent COPD requires surgery for a fractured hip. Her medical history is significant for CAD and compensated congestive heart failure. An electrocardiogram shows first-degree heart block. What is appropriate treatment for her preoperatively?
(A) Start metoprolol 12.5 mg orally twice a day
(B) Start metorpolol 25 mg orally twice a day and optimize for heart rate control
(C) Start atenolol 5 mg intravenously 30 minutes prior to surgery
(D) Do not start β-blocker as patient has severe COPD
(E) Do not start β-blocker as patient has first-degree heart block

Answers to the review questions that appear on page 43. The article on perioperative β-blocker therapy begins on page 19.

1. (B) A 55-year-old man with well-controlled hypertension who is scheduled for nephrectomy for renal mass
2. (E) Continue labetalol and adjust dose to control blood pressure and to achieve a heart rate less than 70 bpm
3. (A) Start low-dose atenolol or metoprolol by mouth preoperatively
4. (B) Give atenolol or metoprolol intravenously preoperatively and titrate to achieve heart rate less than 70 bpm
5. (E) Continue β-blocker postoperatively for 30 days and change to oral when appropriate
6. (D) Do not start β-blocker as patient has severe COPD