

CAN BETA-BLOCKERS BE USED IN PATIENTS WITH HYPOTENSION

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Background: Hypertrophic Cardiomyopathy (HCM) plays a crucial role in altering hemodynamics in patients undergoing non-cardiac surgery intraoperatively and post-operatively, and is associated with significant mortality and morbidity.

Case: A 67 years old female with history of HCM and hyperlipidemia was admitted for elective bilateral mastectomy and breast reconstruction. She underwent left sided axillary dissection and skin grafting and nipple reconstruction. She developed postoperative hypotension and acute respiratory distress soon after extubation. Her physical exam revealed a blood pressure of 85/40 (preoperative BP was 137/80), a pulse rate of 80-90 beats per minute and a loud systolic murmur. Laboratory work revealed drop in her hemoglobin suggestive of postoperative anemia. Her Electrocardiogram was unchanged and her echocardiogram showed worsening in her intracavitary gradient from baseline of 30 mmHg at rest to 80 mmHg at rest. She was aggressively volume resuscitated with 3 units of blood and multiple boluses of IV fluids. BP was invasively monitored with an intra-arterial line. She maintained minimal perfusion with low normal urine output while receiving about 13 liters of IV fluids in the first 12 hours after surgery. She remained with low mean arterial pressure of 50-55 mm of Hg with heart rates of 90-95 beats per minute.

Decision-making: Patient was not responsive to volume resuscitation and Phenylephrine which is the mainstay vasopressor in this situation cannot be used due to concerns of skin graft failure. At this point we used intravenous Metoprolol to reduce the heart rate and this significantly improved the blood pressure and organ perfusion in our patient.

Conclusion: This case reinforces the importance of understanding the basic physiology in patients with HCM will help in clinical decision making. Always keep in mind, reducing the sympathetic activity and maintaining left ventricular filling will give better control of hemodynamics in HCM patients undergoing surgery. Yes, beta-blockers are useful in treating hypotension in certain circumstances.