

C-12 Leading and Establishing a Comprehensive, Multidisciplinary, Evidence-Based Preoperative Optimization Team

Moderator(s)/Facilitator(s): Matthew Giuca, M.D., Nader Nader, M.D.

Objective

After completion of this session, the participant will be able to:

- Organize a multidisciplinary preoperative optimization care team.

Case Stem Question

A 78-year-old male residing in assisted living with a sacral decubitus ulcer is scheduled for debridement and muscle flap surgery under general anesthesia.

****Past Medical History:****

- Coronary artery disease (CAD) status post coronary artery bypass grafting (CABG) in 2015.
- Congestive heart failure (CHF) with an ejection fraction (EF) of 30%.
- Mild to moderate aortic stenosis (AS).
- Diabetes mellitus (DM).
- Hypertension (HTN).
- History of transient ischemic attack (TIA).
- Chronic renal insufficiency (CRI) with a creatinine level of 2.1.
- Prostate cancer status post prostatectomy in 2013.

Guiding Questions for Discussion

1. Is this patient adequately optimized for surgery?
2. Which risk assessment tools would you utilize to evaluate this patient's perioperative risk?
3. Has shared decision-making been implemented in this case? Should it be?
4. What benefits does a multidisciplinary team approach offer to both the patient and the hospital?
5. Given the success of tumor boards in cancer care, should a similar model be adopted for complex preoperative optimization cases?

References

- [1] Leeds IL, Canner JK, Gani F, et al. Increased Healthcare Utilization for Medical Comorbidities Prior to Surgery Improves Postoperative Outcomes. *Annals of Surgery*. 2020;271(1):114-121. doi:10.1097/SLA.0000000000002851.
- [2] Howard R, Yin YS, McCandless L, et al. Taking Control of Your Surgery: Impact of a Prehabilitation Program on Major Abdominal Surgery. *Journal of the American College of Surgeons*. 2019;228(1):72-80. doi:10.1016/j.jamcollsurg.2018.09.018.
- [3] Irani JL, Hedrick TL, Miller TE, et al. Clinical Practice Guidelines for Enhanced Recovery After Colon and Rectal Surgery From the American Society of Colon and Rectal Surgeons and the Society of American Gastrointestinal and Endoscopic Surgeons. *Diseases of the Colon and Rectum*. 2023;66(1):15-40.

doi:10.1097/DCR.0000000000002650.

[4] Bakaeen FG, Gaudino M, Whitman G, et al. 2021: The American Association for Thoracic Surgery Expert Consensus Document: Coronary Artery Bypass Grafting in Patients With Ischemic Cardiomyopathy and Heart Failure. *The Journal of Thoracic and Cardiovascular Surgery*. 2021;162(3):829-850.e1. doi:10.1016/j.jtcvs.2021.04.052.

Preoperative optimization will improve surgical outcomes.

Preoperative optimization, which includes addressing modifiable risk factors and enhancing the patient's physiological reserve, has been shown to improve postoperative outcomes across various surgical disciplines.

For instance, a study published in the *Annals of Surgery* demonstrated that preoperative optimization visits by nonsurgical clinicians for patients with major comorbidities undergoing elective colectomy significantly reduced postoperative complications by 31%. Similarly, the Michigan Surgical and Health Optimization Program (MSHOP) showed that prehabilitation, which includes physical activity, pulmonary rehabilitation, nutritional optimization, and stress reduction, led to fewer complications and lower hospital charges for patients undergoing major abdominal surgery.[1][2]

The American Society of Colon and Rectal Surgeons and the Society of American Gastrointestinal and Endoscopic Surgeons recommend multimodal prehabilitation for patients with multiple comorbidities or significant deconditioning before elective colorectal surgery, citing evidence that prehabilitation improves physical function and reduces postoperative complications.[3]

In the context of coronary artery bypass grafting (CABG), the American Association for Thoracic Surgery highlights the importance of preoperative optimization, including the use of intra-aortic balloon pump therapy, to improve patient status and reduce perioperative morbidity and mortality.[4]

Overall, the evidence supports that preoperative optimization, whether through addressing comorbidities, enhancing physical function, or specific interventions like prehabilitation, leads to improved surgical outcomes, including reduced complications, shorter hospital stays, and lower healthcare costs.