Comparing Complications and Outcomes of OPCAB and MIDCAB Approaches for Patients Undergoing CABG Surgery

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BACKGROUND

CABG
- Coronary artery bypass graft is a surgery procedure to improve blood flow and oxygenation
- Most common procedure performed by cardiac surgeons
- Typically used to treat CAD: plaque build up in coronary arteries that supply blood to the heart
- Best outcomes come from grafting left internal mammary artery (LIMA) to the left anterior descending (LAD) artery.
- Used to improve quality of life, decrease recurrent angina, MI, and risk of death

OPCAB (off pump): conventional approach for CABG
- Advantages: visualization, access, exposure
- Approach: A sternotomy along the entire span of the sternum with lateral retraction LIMA is checked for blood flow and harvested. LIMA-LAD anastomosis is performed to bypass the blockage and restore bloodflow

MIDCAB (minimally invasive): reduce risks and precautions associated with a sternotomy
- Can be performed with an incision between the ribs or several small incisions. Harvesting and anastomosis can occur in the same manner as the OPCAB

PICO QUESTION

For patients requiring a coronary artery bypass graft, does a MIDCAB approach provide less complications than compared to the conventional OPCAB approach?

RESULTS

MIDCAB had more favorable patient outcomes when compared to OPCAB
- Reduced pain perceived
- Better ability of performing ADLs
- Shorter hospital length of stay
- Shorter operation time 152.0 ±43.5 vs 263.2 ±52.4 (min)
- Shorter post-op ventilation
- Decreased amount of blood transfusion 0.79 ±1.58 vs 3.26 ±5.02 (units)
- Incidence of MACCE (Major Adverse Cardiac and Cerebrovascular Event) was 22% lower
- Higher quality of life post-op
- Decreased cost post-op 3,741 ± 1,214 vs 6,361 ± 1,656 (US dollars)
- Higher patient satisfaction 76.5% vs. 42.9%

CLINICAL RELEVANCE

- The effects of the different CABG approaches will affect the way physical therapists base their plan of care
- OPCAB → bigger incision → sternal precautions → more pain and longer ventilation → less aggressive PT
- MIDCAB → smaller incision → shorter recovery time and decreased pain → can be more aggressive with PT early on
- EARLY MOBILIZATION
- Better patient outcomes with MIDCAB because patients have less pain and shorter recovery time

CONCLUSIONS

The MIDCAB approach is a safe alternative to the conventional OPCAB approach and is associated with several post-operative benefits, including but not limited to: shorter ventilation/intubation time, shorter ICU and hospital stays, reduced patient discomfort, and a higher quality of life. With the increased incidence of heart disease and a low health status of surgical candidates, there is a need for safer surgery options, such as MIDCAB, with fewer post-operative complications.

REFERENCES


SUMMARY OF ARTICLES RETRIEVED