Comparative Outcomes of Robotic vs Laparoscopic Non-Elective Colectomy: A Systematic Review and Meta-analysis

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Introduction

- Minimally invasive surgery has emerged as a viable and safe alternative for urgent colorectal procedures.
- However, in the urgent care context, there is no consensus on the superiority of robotic versus laparoscopic techniques.
- Addressing this gap, our study performs a systematic review and meta-analysis comparing the outcomes of robotic and laparoscopic non-elective colectomies.

Methods

- Cochrane, PubMed, EMBASE, and Web of Science databases were systematically searched without language or date restrictions from inception to February 2024 by two authors independently.
- The outcomes of interest included readmission, reoperation rates, anastomotic leak, surgical site infections (SSI), incidence of prolonged postoperative ileus, length of hospital stay (LOS), and rates of conversion to open surgery.

597 **Studies were retrieved from the primary search** → **3 studies** were included in the analysis → **7,471 patients included**

Robotic cases
429 (5.7%)

Laparoscopic cases
7,042 (94.3%)

MAIN FINDINGS

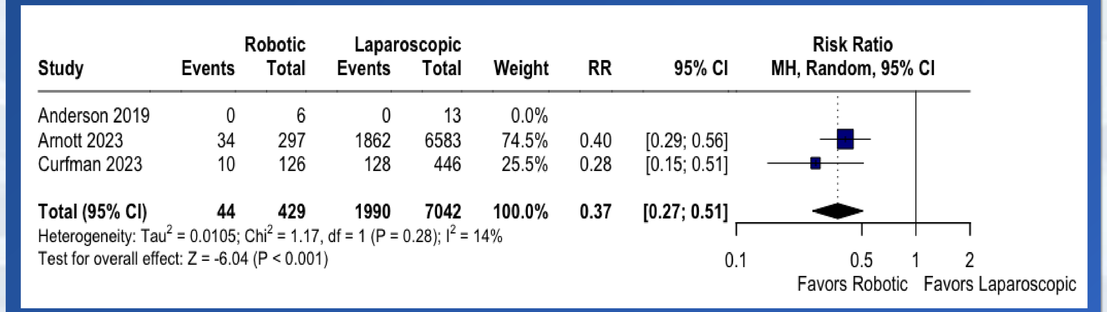


Fig. 1. Conversion to open rates between robotic and laparoscopic approaches

OTHER FINDINGS

- ✓ **Laparoscopic cases presented a lower incidence of postoperative ileus compared to robotic cases (RR 1.55; 95% CI 1.19, 2.02; p< 0.001).**
- ✓ **No statistically significant differences were seen between robotic and laparoscopic approaches for mortality, readmission, reoperation, surgical site infections, and hospital length of stay.**

Conclusion

- This systematic review and meta-analysis suggest that robotic non-elective colectomy is associated with a lower rate of conversion to open surgery compared to laparoscopic approaches, with no significant differences in major postoperative complications or mortality rates.

References

Montefiore
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