

057. The Comparative Efficacy of Robot-Assisted Versus Laparoscopic Surgery for Rectal Cancer: A Systematic Review and Meta-Analysis

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ABSTRACT

Background: Background: Total mesorectal excision (TME) is the gold standard surgical intervention for rectal cancer, associated with effective local recurrence management and improved overall survival rates. Laparoscopic surgery for colon cancer is primarily recognised as a curative treatment. Nonetheless, laparoscopic surgery for rectal cancer presents technological limitations. Robot-assisted laparoscopic total mesorectal excision (TME) surgery for rectal cancer was established to address these technical difficulties. Our objective was to assess the clinical and oncological outcomes of robot-assisted surgery compared to laparoscopic surgery for rectal cancer. **Methods:** We searched PubMed, ScienceDirect, and CENTRAL to identify studies and trials published between 2014 and 2023. The outcomes of our study encompass operational duration, duration of hospital admission, and intra-operative haemorrhage. We employed Revman 5.4.2 to do the meta-analysis. **Results:** Seven trials were analysed, encompassing 1,231 patients, including 545 patients who underwent robotic-assisted surgery and 686 patients who received laparoscopic surgery. Our results demonstrate that robot-assisted surgery significantly reduced operation time (MD 74.04, 95% CI [28.12, 119.97], $p = 0.002$), hospital stay (MD -1.86, 95% CI [-2.68, -1.05], $p < 0.00001$), and intra-operative blood loss (MD 36.83, 95% CI [23.55, 50.11], $p < 0.00001$). Our study identified robot-assisted surgery as a viable option for rectal cancer treatment. **Conclusion:** Our study revealed that robot-assisted surgery correlated with decreased intra-operative blood loss, operative duration, and length of hospital stay. Further research is needed to corroborate these findings

Keywords: Robot-Assisted Surgery, Laparoscopic Surgery, Rectal Cancer, Complications, Surgical Techniques

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