

Can preoperative rehabilitation improve abdominal wall surgery outcomes? A systematic review

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Introduction

Ventral hernia is one of the most common surgical pathologies, affecting nearly half a million people in the United States. Surgery is an effective treatment for ventral hernias; however, postoperative complications, such as seromas, hematomas, surgical site infections (SSIs), reoperation, and recurrence, remain significant challenges. This study aims to investigate the literature and to evaluate whether preoperative rehabilitation can reduce postoperative complications.

Preoperative Rehabilitation in Ventral Hernia Repair

Materials and Methods

Cochrane Central, Embase, and PubMed were systematically searched for studies comparing preoperative interventions with control and their effects on postoperative outcomes in patients undergoing ventral hernia repair. The primary endpoints were hernia recurrence, hematoma, wound infection, return to the operating room (OR), seroma, and wound breakdown.

Results

Study	Wound Breakdown	Hernia Recurrence	Hematoma	Wound Infection
Bernardi, 2022	N/A	Non-PRVHR: 4 (4.0%) PRVHR: 0 (0.0%)	N/A	N/A
Jong, 2023	N/A	N/A	Non-PRVHR: 15 (16.6%) PRVHR: 21 (16.6%)	Non-PRVHR: 14 (13.5%) PRVHR: 17 (13.5%)
Liang, 2018	Non-PRVHR: 1 (2.3%) PRVHR: 1 (2.3%)	N/A	Non-PRVHR: 0 (0.0%) PRVHR: 1 (2.3%)	Non-PRVHR: 0 (0.0%) PRVHR: 0 (0.0%)
Lindstrom, 2008	N/A	N/A	Non-PRVHR: 7 (6.3%) PRVHR: 3 (6.3%)	Non-PRVHR: 4 (4.2%) PRVHR: 2 (4.2%)
Renshaw, 2021	N/A	Non-PRVHR: 489 (28.3%) PRVHR: 418 (28.3%)	N/A	Non-PRVHR: 162 (15.3%) PRVHR: 78 (15.3%)
Spurzem, 2024	N/A	Non-PRVHR: 1 (0.0%) PRVHR: 0 (0.0%)	N/A	Non-PRVHR: 0 (0.0%) PRVHR: 1 (4.2%)
Tran, 2024	N/A	Non-PRVHR: 1 (0.0%) PRVHR: 0 (0.0%)	N/A	Non-PRVHR: 3 (11.8%) PRVHR: 2 (11.8%)

Study	Return to OR	Seroma	Number of patients who underwent PRVHR or Non-PRVHR
Bernardi, 2022	Non-PRVHR: 0 (0.0%) PRVHR: 1 (0.0%)	N/A	PRVHR: 59
Jong, 2023	Non-PRVHR: 4 (4.0%) PRVHR: 10 (7.6%)	Non-PRVHR: 19 (17.4%) PRVHR: 22 (17.4%)	PRVHR: 126
Liang, 2018	N/A	Non-PRVHR: 5 (5.0%) PRVHR: 1 (2.3%)	PRVHR: 44
Lindstrom, 2008	Non-PRVHR: 2 (2.0%) PRVHR: 1 (2.0%)	Non-PRVHR: 5 (6.2%) PRVHR: 3 (6.2%)	PRVHR: 48
Renshaw, 2021	Non-PRVHR: 36 (15.1%) PRVHR: 15 (1.3%)	N/A	PRVHR: 1,475
Spurzem, 2024	Non-PRVHR: 1 (4.2%) PRVHR: 1 (4.2%)	Non-PRVHR: 1 (0.0%) PRVHR: 0 (0.0%)	PRVHR: 24
Tran, 2024	Non-PRVHR: 2 (5.8%) PRVHR: 1 (5.8%)	N/A	PRVHR: 17

PRVHR: PreRehabilitationonVentral Hernia Repair;Non-PRVHR: Non PreRehabilitationonVentral Hernia Repair;N/A: Non-available.

Conclusion

Our comprehensive systematic review demonstrated thatpreoperative rehabilitation is associated with low rates of wound infection,seroma, and wound breakdown.