Robotic right versus left colectomy for colorectal cancer: A systemic review and meta-analysis

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Introduction

- Previous studies comparing right and left colectomies show variable outcomes
- Scarce data on robotic right (RRC) vs. left (RLC) colectomies

AIM:
Compare the short-term outcomes between RRC and RLC for neoplasia.

Methods

- Meta analysis from the time of inception of datasets to May 1, 2022
- English publications in Ovid MEDLINE, Ovid EMBASE, and Scopus
- **Primary outcome**: Ileus
- **Secondary outcomes:** Op time, blood loss, conversion, wound infection, anastomotic leak, LOS, reoperation, and readmission

Baseline characteristic

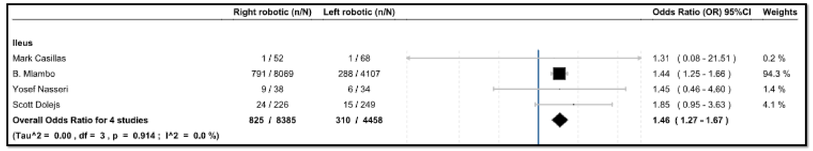
13,514 patients with colon neoplasia enrolled in 9 studies
• Overall mean age 64.1 years
• 52% female
• 8,656 (64.0 %) RRC & 4,858 (36.0 %) RLC

Study	Country	RRC (n)	RLC (n)
Casillas et al, 2013	U.S	52	68
Davis et al., 2014	U.S	207	326
Vasudevan et al., 2014	U.S	24	43
Guerrieri et al., 2015	Italy	18	6
Ferrara et al., 2016	Italy	13	11
Dolejs et al., 2017	U.S	226	249
Dixon et al., 2020	U.K	9	14
Nasseri et al., 2021	U.S	38	34
Mlambo et al., 2022	U.S	8069	4107

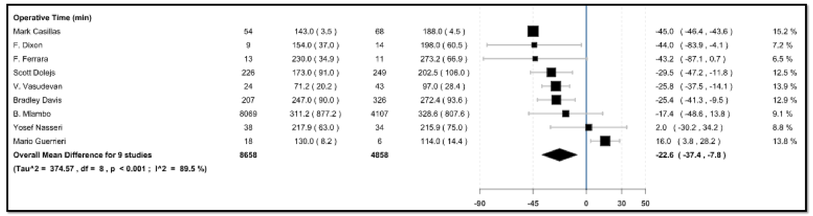
Results

RRC was independently associated with the following:

- **Increased risk of ileus**

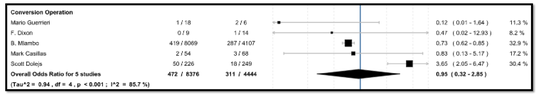


- **Shorter operative time**

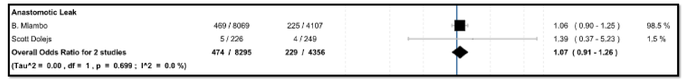


There were no differences between RRC and RLC in the following:

- **Conversion to open**



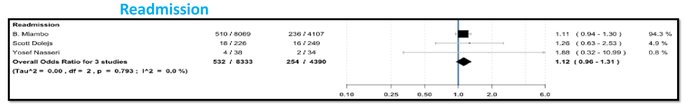
- **Anastomotic leak**



- **Blood loss**



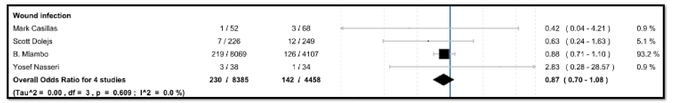
- **Readmission**



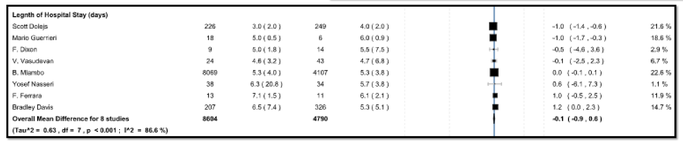
- **Reoperation**



- **Wound infection**



- **Length of hospital stay**



Take away points

- Studies on post-colectomy outcomes typically group all segmental colectomies
- Paucity of data on Robotic R vs. L colectomy despite steep uptake of robotic surgery
- **This first meta-analysis revealed that compared to RLC, RRC is associated with**

↑ Ileus
Hypothesis: Hyperactive distal colonic motility patterns, activation of retroperitoneal splanchnic nerves, variations in anastomotic techniques, and manipulation of the duodenum

↓ operative time
Hypothesis: More time is dedicated to searching for the ureters due to splenic flexure mobilization in RLC.

- **No other significant differences in outcome between RRC and RLC**

Hypothesis: ERAS protocol and robotic surgery make have mitigating differences.

Conclusion

- **Despite advancements in robotic and ERAS protocol, Right colectomy is consistently associated with a higher risk of ileus**
- **Sidedness should be a factor in future studies of post-colectomy outcomes**

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