

# COMPARATIVE ANASTOMOTIC CONFIGURATIONS AND DISEASE RECURRENCE RATES OF ROBOTIC VS. LAPAROSCOPIC PRIMARY ILEOCOLONIC RESECTION FOR CROHN'S DISEASE

Ruiqing Liu, MD, PhD<sup>1</sup>; Stocchi Luca, MD, MBA<sup>1</sup>; Richard Sassun, MD<sup>2</sup>; Kevin T. Behm, MD<sup>2</sup>; David W. Larson, MD<sup>2</sup>; Dorin T. Colibaseanu, MD<sup>1</sup>; Michelle F. DeLeon, MD<sup>1</sup>; Amit Merchea, MD<sup>1</sup>; Sherief F. Shawki, MB, BCh, MD<sup>2</sup>  
<sup>1</sup> Mayo Clinic Florida; <sup>2</sup> Mayo Clinic Minnesota

## BACKGROUND

Robotic surgery is increasingly used to treat ileocolic Crohn’s disease (CD). However, there is scant data on postoperative recurrence following robotic primary ileocolonic resection (RICR) when compared to laparoscopic primary ileocolonic resection (LICR).

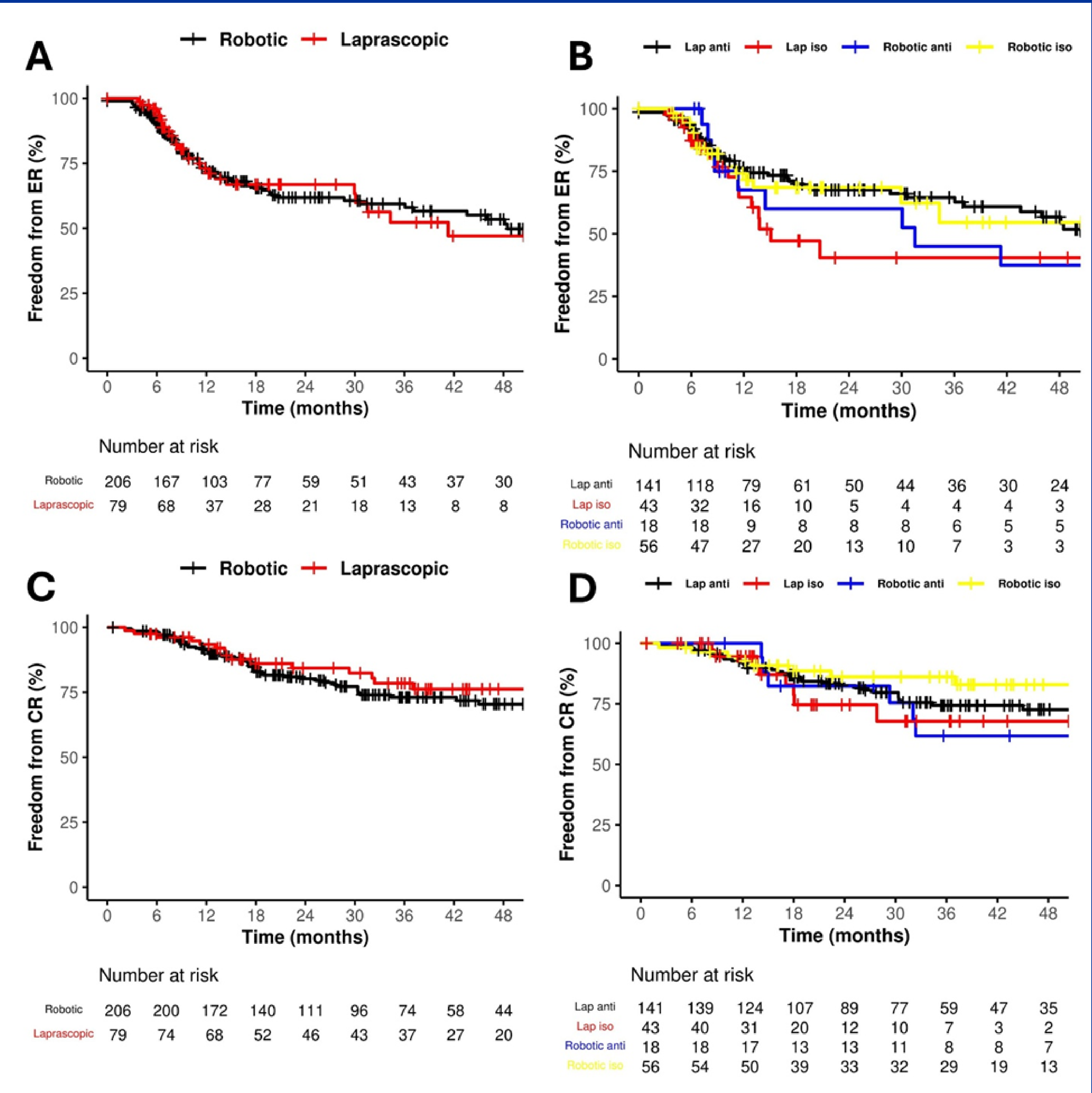
## METHODS

All consecutive adult patients who underwent RICR or LICR for CD between January 2016 and November 2024 and endoscopic follow-up at our institution were included in this study. The primary outcome was endoscopic recurrence (ER), defined as a Rutgeerts score  $\geq$  i2. Secondary outcomes included postoperative morbidity, clinical recurrence (CR), defined as symptom recurrence or radiologic progression supported by an endoscopic recurrence, and surgical recurrence (SR), defined as the need for reoperation.

## RESULTS

A total of 285 patients were included in the study (79 with RICR vs. 206 with LICR). RICR was significantly associated with a higher rate of iso-peristaltic side-to-side anastomoses (75.7% vs. 23.4% in LICR,  $p < 0.001$ ), while

Figure. KM curves of ER-free and CR-free survival (laparoscopic vs. robotic; lap/robotic isoperistaltic vs. antiperistaltic )



anti-peristaltic side-to-side anastomoses were prevalent in LICR with the same proportion. After a median follow-up of 11.4 (6.7- 28.6) months, 97 of 285 patients developed ER. Both 1-year and 3-year ER-free survival rates were similar (73.1% vs. 72.6% and 52.3% vs. 59.4% for RICR and LICR, respectively;  $p = 1$ ). After a median clinical follow-up of 36.7 (4.7 - 96.8) months, no significant differences were observed between RICR and LICR in either cumulative CR (20.3% vs 25.7%,  $p = 0.28$ ) or SR (3.7% vs. 0.9%,  $p = 0.11$ ). Robotic iso-peristaltic anastomosis demonstrated similar postoperative morbidity, ER, CR, and SR rates when compared to both laparoscopic anti-peristaltic and iso-peristaltic configurations. Multivariable Cox regression analysis identified age over 40 (Hazard Ratio (HR): 1.7,  $p = 0.01$ ) and lack of postoperative prophylaxis (HR: 0.61,  $p = 0.03$ ) as independent risk factors associated with ER, while neither surgical approach nor anastomotic configuration was associated with the risk of either ER or CR.

## CONCLUSIONS

Robotic ICR for CD is an effective approach with disease recurrence rates comparable to those of laparoscopic surgery in long-term outcomes. The specific anastomotic configuration should be left at the discretion of the operating surgeon.