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# Endorectal-Anastomosis vs Laparoscopic Rectal Cancer Resection: The ROLARR Randomized Clinical Trial

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**IMPORTANCE** Robotic rectal cancer surgery is gaining popularity, but limited data are available regarding safety and efficacy.

**OBJECTIVE** To compare robotic-assisted vs conventional laparoscopic surgery for risk of conversion to open laparotomy among patients undergoing resection for rectal cancer.

**DESIGN, SETTING, AND PARTICIPANTS** Randomized clinical trial comparing robotic-assisted vs conventional laparoscopic surgery among 471 patients with rectal adenocarcinoma suitable for curative resection conducted at 29 sites across 10 countries, including 40 surgeons. Recruitment of patients was from January 7, 2011, to September 30, 2014, follow-up was conducted at 30 days and 6 months, and final follow-up was on June 16, 2015.

**INTERVENTIONS** Patients were randomized to robotic-assisted (n = 237) or conventional (n = 234) laparoscopic rectal cancer resection, performed by either high (upper rectum) or low (total rectum) anterior resection or abdominoperineal resection (rectum and perineum).

**MAIN OUTCOMES AND MEASURES** The primary outcome was conversion to open laparotomy. Secondary end points included intraoperative and postoperative complications, circumferential resection margin positivity (CRM+) and other pathological outcomes, quality of life (36-Item Short Form Survey and 20-item Multidimensional Fatigue Inventory), bladder and sexual dysfunction (International Prostate Symptom Score, International Index of Erectile Function, and Female Sexual Function Index), and oncological outcomes.

**RESULTS** Conversion to open laparotomy was significantly higher in the robotic-assisted group (19.9%) compared with the conventional laparoscopic group (9.7%) (P = .001). There were no significant differences in other outcomes.







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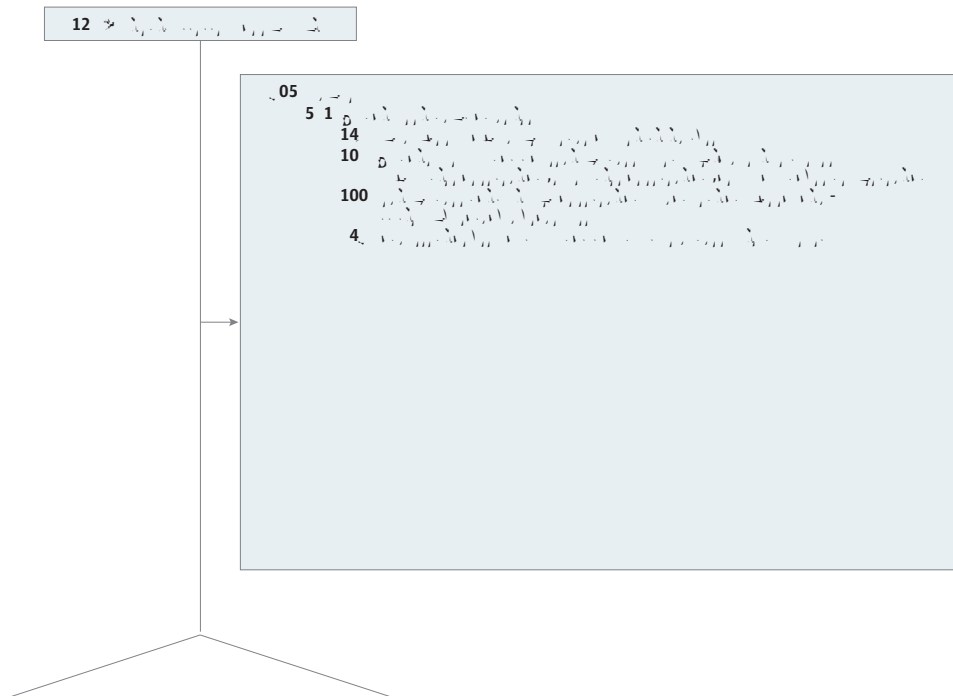
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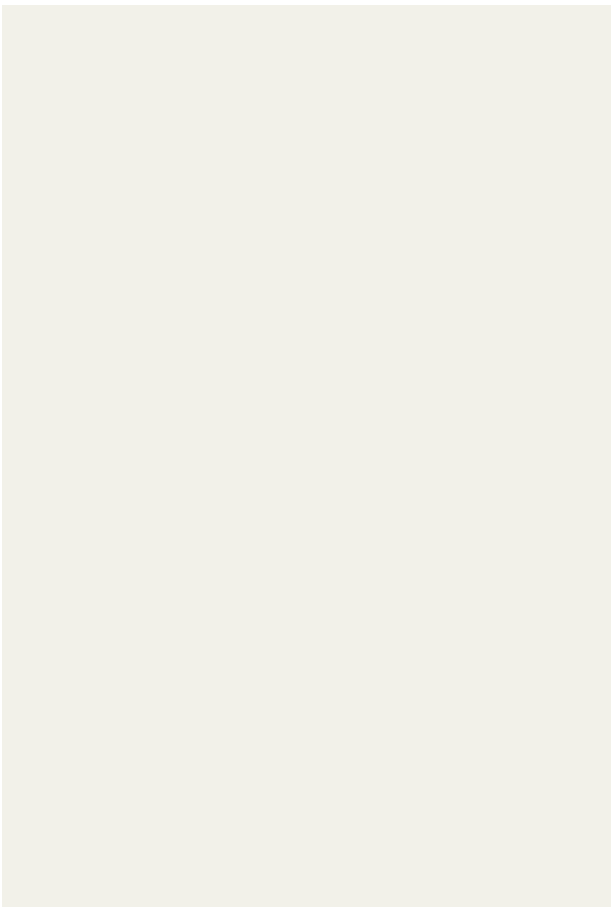
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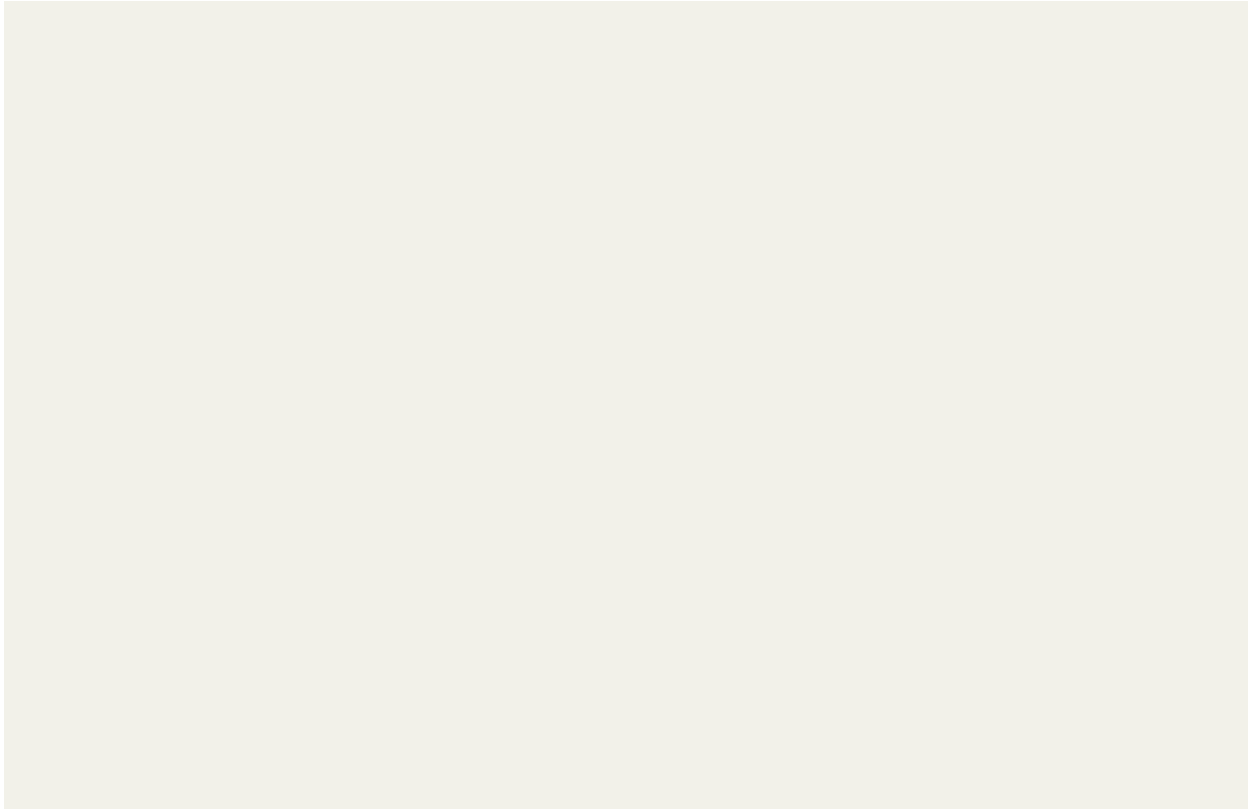
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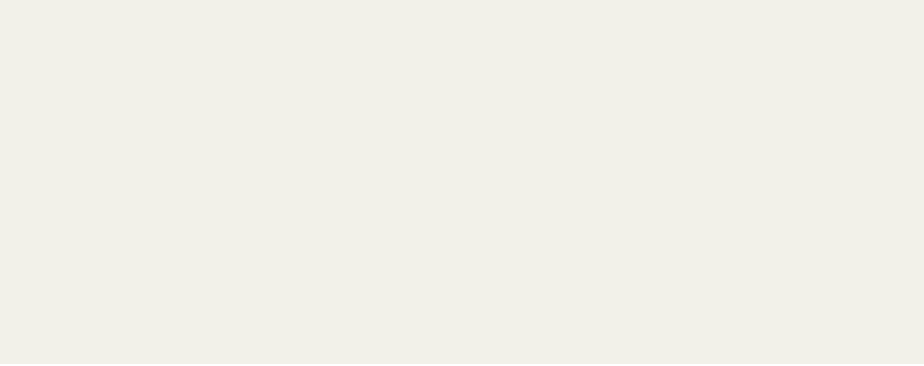
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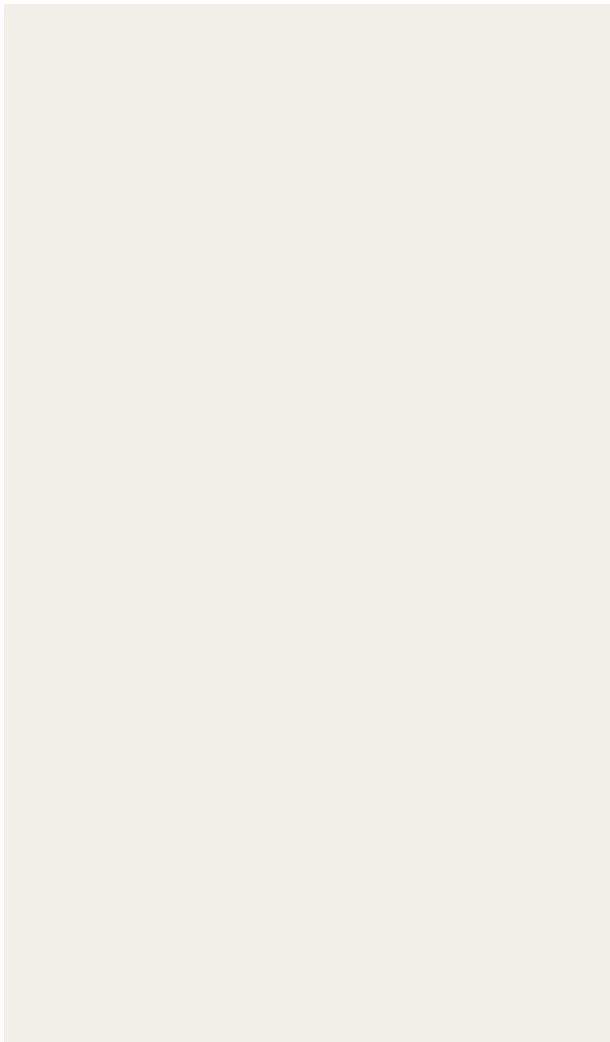
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## Conclusions

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### ARTICLE INFORMATION

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**Author Contributions:** Dr Jayne and Mr Corrigan had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

*Concept and design:*

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