



## Evaluating bacterial contamination and surgical site infection risks in intracorporeal anastomosis: Role of bowel preparation

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### Abstract

We recently read the study by Kayano *et al* on intracorporeal anastomosis (IA) for colon cancer, which assessed bacterial contamination and medium-term oncological outcomes and affirmed that IA is analogous to extracorporeal anastomosis in reducing intraperitoneal bacterial risk and achieving similar oncological results. Our commentary addresses gaps, particularly concerning bowel preparation and surgical site infections (SSIs), and highlights the need for comprehensive details on the bowel preparation methods that are currently employed, including mechanical bowel preparation, oral antibiotics (OA), their combination, and specific OA types. We emphasize the necessity for further analyses that investigate these methods and their correlation with SSI rates, to enhance clinical protocol guidance and optimize surgical outcomes. Such meticulous analyses are essential for refining strategies to effectively mitigate SSI risk in colorectal surgeries.

**Key Words:** Intracorporeal anastomosis; Surgical site infection; Mechanical bowel preparation; Oral antibiotics; Bacterial contamination; Colon cancer

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**Core Tip:** We examined the study by Kayano *et al* on intracorporeal anastomosis for colon cancer, with a focus on its equivalence to extracorporeal anastomosis in managing bacterial risk and achieving oncological outcomes. A detailed examination of current bowel preparation methodologies that distinguishes between mechanical bowel preparation, oral antibiotics, or their combination and specific impact on surgical site infections (SSIs) is needed. Further research that precisely links bowel preparation methods with SSI rates are required to enhance patient outcomes and surgical safety during colorectal procedures. This critical insight urges a reevaluation of current practices and paves the way for substantial procedural improvements.

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## TO THE EDITOR

We read the recent paper “Evaluation of bacterial contamination and medium-term oncological outcomes of intracorporeal anastomosis for colon cancer: A propensity score matching analysis” by Kayano *et al*[1] with great interest. We thank the authors for their extensive work and their contributions to the field of intracorporeal anastomosis (IA) in colon cancer treatment.

This study evaluated bacterial contamination and medium-term oncological outcomes of IA for colon cancer and revealed that IA is comparable to extracorporeal anastomosis in terms of intraperitoneal bacterial contamination risk and medium-term oncological results. However, here, we address certain aspects of the methodology and findings, particularly with regards to bowel preparation and surgical site infections (SSIs).

Despite ongoing efforts to reduce SSIs in colorectal surgery using various bowel preparation methods, SSIs persist and are of particular concern in IA. Recent guidelines recommend the use of oral antibiotics (OA) alone for right colon surgery, while a combination of mechanical bowel preparation (MBP) and OA is advised for IA procedures for the right colon[2]. This difference can be attributed to the characteristics of IA procedures, which can affect SSI.

Given these considerations, a detailed description of the bowel preparation methods used in this study is essential for a thorough SSI risk assessment. Information should include whether MBP alone, OA alone, or a combination of MBP and OA was employed, and the specific types of OA that were administered. This detailed preparation methodology information is crucial for evaluating the effectiveness of different strategies that aim to minimize the incidence of SSIs in colorectal surgery.

Additional analyses that examine SSIs that occur in relation to bowel preparation methods are required. Notably, studies that compared MBP with OA and OA alone for bowel preparation have attracted recent attention[3]. However, there is a paucity of data that compares the effectiveness of MBP with OA *vs* OA alone, particularly in the context of IA [4]. This gap is particularly critical, as the choice of bowel preparation could significantly affect the rates of SSIs and other postoperative complications. In this study, additional analyses that examine SSI relative to bowel preparation methods could provide invaluable insights and potentially guide future clinical protocols.

Additionally, the pioneering discussion on bacterial contamination in IA can be expanded by correlating culture-positive rates with specific bowel preparation methods. Notably, the incorporation of a detailed analysis of culture-positive rates that correlates with specific bowel preparation methods would enhance our understanding of the procedural implications of bacterial contamination risks. Such data are pivotal in determining the most effective bowel preparation regimens to minimize the bacterial load and reduce SSI risk.

We believe that addressing these points would not only clarify the methodologies of this impactful study but also enhance the utility of the investigators’ findings for diverse clinical applications. Furthermore, detailed and specific data on bowel preparation methods can guide more accurate clinical decisions and optimize patient outcomes and procedural efficacy around the world.

## FOOTNOTES

**Author contributions:** Lee J designed and conducted the study and wrote the manuscript; the author has read and approved the final manuscript.

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**REFERENCES**

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- 1 **Kayano H**, Mamuro N, Kamei Y, Ogimi T, Miyakita H, Nakagohri T, Koyanagi K, Mori M, Yamamoto S. Evaluation of bacterial contamination and medium-term oncological outcomes of intracorporeal anastomosis for colon cancer: A propensity score matching analysis. *World J Gastrointest Surg* 2024; **16**: 670-680 [PMID: [38577098](#) DOI: [10.4240/wjgs.v16.i3.670](#)]
- 2 **Antoniu SA**, Huo B, Tzani AA, Koutsioroumpa O, Mavridis D, Balla A, Dore S, Kaiser AM, Koraki E, Massey L, Pellino G, Psychogiou M, Sayers AE, Smart NJ, Sylla P, Tschudin-Sutter S, Woodfield JC, Carrano FM, Ortenzi M, Morales-Conde S. EAES, SAGES, and ESCP rapid guideline: bowel preparation for minimally invasive colorectal resection. *Surg Endosc* 2023; **37**: 9001-9012 [PMID: [37903883](#) DOI: [10.1007/s00464-023-10477-0](#)]
- 3 **Catarci M**, Guadagni S, Masedu F, Sartelli M, Montemurro LA, Baiocchi GL, Tebala GD, Borghi F, Marini P, Scatizzi M; The Italian ColoRectal Anastomotic Leakage iCral Study Group. Oral Antibiotics Alone *versus* Oral Antibiotics Combined with Mechanical Bowel Preparation for Elective Colorectal Surgery: A Propensity Score-Matching Re-Analysis of the iCral 2 and 3 Prospective Cohorts. *Antibiotics (Basel)* 2024; **13** [PMID: [38534670](#) DOI: [10.3390/antibiotics13030235](#)]
- 4 **Willis MA**, Toews I, Soltau SL, Kalff JC, Meerpohl JJ, Vilz TO. Preoperative combined mechanical and oral antibiotic bowel preparation for preventing complications in elective colorectal surgery. *Cochrane Database Syst Rev* 2023; **2**: CD014909 [PMID: [36748942](#) DOI: [10.1002/14651858.CD014909.pub2](#)]



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