



AB038. SOH23ABS_190. Selective antibiotic decontamination of the gastrointestinal tract reduces infectious complications in elective colorectal surgery

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Background: Controversy exists over the optimal bowel preparation strategy in elective colorectal surgery. While intravenous (IV) antibiotics at anaesthetic induction reduces surgical site infection (SSI) rates and is standard-of-care, the role of mechanical bowel preparation (MBP), enemas (EN), oral antibiotics (OAB), and their effect on SSI, anastomotic leak (AL) rates and other perioperative outcomes is unclear. Aim: to determine the optimal preoperative bowel preparation strategy in elective colorectal surgery.

Methods: A systematic review and network meta-analysis (NMA) of randomised controlled trials (RCTs) was performed from inception to December 2021. Primary outcomes included SSI and AL. Secondary outcomes included 30-day mortality, ileus, length of stay, return to theatre, other infections, and preparation adverse effects.

Results: Fifty-nine RCTs involving 15,363 patients were included in final analysis—3,002 (19.5%) had IV antibiotics, 5,258 (34.2%) had IV + MBP, 1,247 (8.1%) had IV + OAB, 4,183 (27.2%) had IV + OAB + MBP, 262 (1.7%) had IV + EN and 1,411 (9.2%) had OAB + MBP. Using the group receiving solely IV antibiotics as a baseline comparator, NMA demonstrated significant reduction in SSI risk with IV + OAB (OR 0.42; 95% CI: 0.27, 0.67) and IV + OAB + MBP (OR 0.52; 95% CI: 0.37, 0.74). OAB + MBP had higher SSI rates compared to IV alone (OR 1.75; 95% CI: 1.11, 2.76). AL rates were lower with IV + OAB (OR

0.60; 95% CI: 0.37, 0.97) and IV + OAB + MBP (OR 0.61; 95% CI: 0.40, 0.94) compared to IV alone. There was no significant difference in outcomes with MBP in the absence of IV and OAB in the main analysis.

Conclusions: This study demonstrates the reduction in infectious complications associated with combined IV + OAB bowel preparation, and the interplay between the intestinal microbiome and anastomotic wound healing. Selective decontamination of the gastrointestinal tract should represent the standard-of-care for patients undergoing elective colorectal surgery.

Keywords: Anastomotic leak (AL); antibiotics; colorectal surgery; mechanical bowel preparation (MBP); surgical site infection (SSI)

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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