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LETTER TO THE EDITOR

Bowel preparation in elective colorectal surgery: back to the future?

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Dear Editor,

We read with great interest the paper by Leenen et al. recently published in your journal, concerning the effectiveness of mechanical bowel preparation (MBP) before colorectal surgery [1]. This systematic review and meta-analysis examine the role of MBP in preventing anastomotic leakage, that, together with surgical site infections (SSIs), is the most frequent and redoubtable complication after colorectal resections, hardly affecting patients' outcomes. The authors in their update of the current literature showed no significant difference among patients who underwent MBP or not in terms of rate of anastomotic leakage, even dividing patients into subgroups based on the type of bowel preparation (polyethylene glycol vs enema vs fluid diet for the previous 3 days). All the patients of the included studies had intravenous antibiotics intra- and post-operatively, even in the control group, whilst there is no reference to the preoperative administration of oral antibiotics that are coming back to attention of recent literature as a possible further tool to reduce complications. In this letter, we would like to emphasize that bowel preparation and antimicrobial prophylaxis before elective colorectal resections are an evolving concept and show how in the last years a sort of return to the past is occurring.

Preoperative MBP was first described by Halsted in 1887; its rationale was to reduce faecal pressure on the new-born anastomosis and quickly became a surgical dogma. In the 70s, Nichols and Condon developed the combination of MBP and oral antibiotics (neomycin and erythromycin) the day before surgery to decrease the intraluminal bacterial load. After the initial spread of this approach, oral antibiotics (OA) were abandoned in favour of intravenous preoperative administration of systemic antibiotics, thinking they have a better effectiveness in preventing SSIs. MBP gradually fell out of favour too, especially due to the well-known MBP-related complications such as dehydration, electrolyte imbalances and intraoperative faecal spillage.

As well described recently not only by Leenen but also by several multicentre randomized studies and Cochrane reviews from 2007 to 2011, no differences in anastomotic leak or in SSI rate among patients who underwent MBP or not were detected. This evidence, along with the spread of enhanced recovery after surgery (ERAS) programs, led to the progressive abandonment of the routine MBP. Although high variability among colorectal surgeons exists, the use of MBP is still diffused and only a mild trend of reduction among laparoscopic surgeons has been observed. Intravenous antibiotic prophylaxis is ubiquitous whilst, especially in European countries, OA are rarely prescribed. A recent meta-analysis of randomized controlled trials including 1769 cases [2] which compared the SSI rate among patients who underwent MBP plus oral and systemic antibiotics and patients with MBP and intravenous prophylaxis only showed that the addition of OA produces a significantly lower incidence of SSIs after elective colorectal surgery. Koller et al. [3] in their retrospective analysis of 32,359 patients confirmed the role of OA in preventing SSIs with a lower incidence of anastomotic leak, postoperative ileus and readmission rate, both if administered alone or together with MBP. An analysis of an American database with 4999 patients [4] documented how MBP alone and OA alone do not differ from no preparation in terms of outcomes, whilst their association reduces all the complications. On the contrary, a review of twenty-three randomized clinical trials and eight cohort studies [5] showed that the combined use of oral and systemic antibiotics is useful to reduce the risk of SSIs, whilst the addition of MBP does not give any advantage. However, all the cited studies and most of the evidence in the literature agree with the statement that MBP alone is ineffective in preventing SSIs and other complications, so its use seems to be rational only if combined with OA.

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The most important limitations of these data are their retrospective nature and the high heterogeneity of the antibiotic regimens although the most common is based on neomycin and metronidazole.

Some new guidelines are beginning to recommend MBP plus OA but there is no longer consensus among colorectal surgeons. Moreover, current literature often analyses colonic and rectal resections together and lacks randomized trials evaluating separately the role of MBP and OA in these two different subgroups. In this scenario, standardizing the modality of bowel preparation before elective colorectal resections still represents a hard challenge.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Research involving human participants and/or animals This article does not involve any studies with animals.

Informed consent Not required.

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