

# Letters

## COMMENT & RESPONSE

**In Reply** We have carefully read the comments of Rozental et al regarding our published article.<sup>1</sup> The authors suggest that the implementation of Enhanced Recovery After Surgery (ERAS) protocols not only decreases morbidity rate and hospital stay<sup>2</sup> but, when used worldwide, it should reduce disparities in health care. We could not agree more. In this context, the relevant question has moved from documenting the effectiveness of the Enhanced Recovery Pathways (ERP) to detect which items are significantly associated with both better outcomes and adherence to the protocol. Our study showed that the adherence to ERAS protocols in colorectal surgery is low, and there are many centers that wrongly believe they are doing well with the compliance.<sup>1</sup> Regarding disparities in health care, Europe could be in some way different to the United States, but a study conducted in Scandinavia<sup>3</sup> has found that although their centers have a greater adherence to the protocol than the Spanish ones, there is a great disparity within compliance between hospitals.<sup>3</sup>

In 2014, the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP) introduced 13 process elements through an Enhanced Recovery in NSQIP pilot project designed to support ERP implementation for colectomy. Data from this registry, including 8139 patients undergoing elective colectomy at 113 hospitals, were recently published. As expected, a greater adherence to the ERP was associated with earlier recovery, decreased complications, and shorter length of stay.<sup>4</sup> Interestingly, and unlike European registers,<sup>1,3</sup> racial/ethnic and dependency data were collected as well as other demographic variables. Ethnic minorities, obese patients, dependent patients, and patients with higher American Society of Anaesthesiologists scores had a lower adherence to the ERAS protocol evaluated.<sup>3</sup> Thorn et al<sup>5</sup> defined the active and passive ERAS elements. They considered as passive elements the elements that do not require the participation of the patient, such as epidural thoracic anesthesia or the avoidance of the nasogastric tube, and the active elements as the ones that need the cooperation of the patients to be carried out; for example, early mobilization. In addition, they found that poor active compliance was associated with increased morbidity and longer length of stay, suggesting that dependent, elderly, and frail patients need more resources to achieve compliance with the active part of the ERP that is also associated with outcomes.<sup>1,3</sup>

In any case, the success of a good implementation could be much simpler if we bear in mind that the existence of more

than 20 perioperative items in the protocols makes it difficult to carry them out, especially when some of these steps lack the proper scientific evidence.<sup>6</sup> Moreover, in our opinion, it is not enough to ease the ERAS protocols; they must be adapted to local, regional, or cultural particularities of the patients. This should lead to greater compliance and ultimately fewer inequalities.

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1. Ripollés-Melchor J, Ramírez-Rodríguez JM, Casans-Francés R, et al; POWER Study Investigators Group for the Spanish Perioperative Audit and Research Network (REDGERM). Association between use of enhanced recovery after surgery protocol and postoperative complications in colorectal surgery: the Postoperative Outcomes Within Enhanced Recovery After Surgery Protocol (POWER) study. *JAMA Surg*. 2019;154(8):725-736.
2. Ljungqvist O, Scott M, Fearon KC. Enhanced recovery after surgery: a review. *JAMA Surg*. 2017;152(3):292-298. doi:[10.1001/jamasurg.2016.4952](https://doi.org/10.1001/jamasurg.2016.4952)
3. ERAS Compliance Group. The impact of enhanced recovery protocol compliance on elective colorectal cancer resection: results from an international registry. *Ann Surg*. 2015;261(6):1153-1159. doi:[10.1097/SLA.0000000000001029](https://doi.org/10.1097/SLA.0000000000001029)
4. Berian JR, Ban KA, Liu JB, Ko CY, Feldman LS, Thacker JK. Adherence to enhanced recovery protocols in NSQIP and association with colectomy outcomes. *Ann Surg*. 2019;269(3):486-493. doi:[10.1097/SLA.0000000000002566](https://doi.org/10.1097/SLA.0000000000002566)
5. Thorn CC, White I, Burch J, Malietzis G, Kennedy R, Jenkins JT. Active and passive compliance in an enhanced recovery programme. *Int J Colorectal Dis*. 2016;31(7):1329-1339. doi:[10.1007/s00384-016-2588-4](https://doi.org/10.1007/s00384-016-2588-4)
6. Memtsoudis SG, Poeran J, Kehlet H. Enhanced recovery after surgery in the United States: from evidence-based practice to uncertain science? *JAMA*. 2019;321(11):1049-1050. doi:[10.1001/jama.2019.1070](https://doi.org/10.1001/jama.2019.1070)