Author's response to reviews

Title: Enhanced recovery in colorectal surgery: a multicentre study

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Version: 3  Date: 10 March 2011

Author's response to reviews: see over
Dear Dr Karsten Junge,

Thank you for your recent letter regarding our manuscript 2399522764624957 *Enhanced recovery in colorectal surgery: a multicentre study*. We would like to thank you and the reviewers for the effort invested in improving our paper.

We have attended to the questions and concerns raised by the reviewers, as outlined in the following text. We have also had the manuscript reviewed by an experienced English science writer and editor.

We hope the changes made will clear the way for publication and look forward to hearing from you.

Yours Sincerely,

Sergio Maeso
Editor:

We have added a paragraph in the manuscript relative to ethics and consents. Please see page 7 last paragraph.

Reviewer: Wolfgang Schwenk, MD, Professor of Surgery, FACS

The term ERP should be omitted and ERAS (Enhanced Recovery After Surgery) used in the manuscript, because the acronym "ERAS" has been used in several publications before and is well known to the surgical community.

We have changed the acronym ERP using ERAS as reviewer suggested.

The authors should state how many patients in total underwent colorectal surgery in the participating hospitals during the period of the study.

An estimation of the number of patients underwent colorectal surgery in the hospitals included is around 380-400 patients. As these figures are not registered we do not include it in the text.

The reasons for exclusion from the study and the number of excluded patients should be given.

The reasons for excluding patients are detailed in the methods section under the heading of exclusion criteria. Of all patients who initially met criteria for inclusion, 16 were excluded, 9 patients were in intensive care at the discretion of the anesthetist and 7 received an unscheduled ileostomy. Please see page 10, first paragraph.

It should be clarified whether all hospitals participated from the beginning of the study period or whether certain hospitals jointed the study group later during the study period.

Certainly all the hospitals started at a time, from the first meeting in Madrid. Please see page 7 second paragraph.

The authors use the term "pain control without sedation" in the manuscript. This is not a term easily understood. Furthermore, thoracic epidural analgesia is considered a mainstream of ERAS-protocols at least in open surgery. The number of patients receiving such thoracic epidural analgesia has to be given!

We have change pain controlled without sedation by opioid-free pain control as other publications.

As you can see in table 3 38.8% of patients receipt epidural anaesthesia.

The discussion is rather short. Most importantly, the reasons for a rate of only 65% of all patients fully compliant with the ERAS protocol should be
given and discussed in detail. Similarities and differences to other multicenter studies should be pointed out.

We have added this paragraph in page 15: “The items of the protocol with less compliance were early oral fluid administration, goal-directed fluid therapy and early mobilization. The reason why these items obtained different compliance with the protocol could be the taste of oral fluid, rejection by patients, unavailability of devices and temporary employment of some healthcare providers involved in the ERAS.”

Our study is similar in terms of mortality, readmissions and complications than most of the published papers. We have added a paragraph comparing these results. Please see fourth paragraph on page 15.

**Reviewer: Kenneth C.H. Fearon**

**How was the programme implemented in the 12 centres?**

Regarding the implementation and the supervision of the program we have added a second paragraph on page 7: “There were two meetings with at least two professionals of each centre, a surgeon and an anaesthetist. During these meetings discussions were held with national and international experts who assisted the group in the implementation of the program. These professionals were the persons in charge to develop the program in their centre. There were two annual reunions with the group to supervise and improve the compliance of the protocol.”

**How was the protocol supervised in each centre?**

**Did protocol compliance vary between centres? Did this relate to length of stay at each centre?**

We did not analyze the data at centre level but only the whole data base so we can not detect these differences. Objective of the study was not to know individual results of each centre and the differences between them.

**64% of procedures were performed laparoscopically and yet median length of stay was 6 days. Did laparoscopic surgery (minimal access) contribute to the rate of recovery of patients? If not, what value is there in the laparoscopic approach?**

The hospital stay was seven days in the group of patients included in the ERAS similar to that reported by others multicenter studies (Schwenk, Braumann) with similar rates of laparoscopic surgery.

**What was the extent of missing data? How was this handled?**

Missing values were most important for the variable surgical approach with 6.2% of them, being lower in the other variables. This is a descriptive study so we do not use any imputation or other method to handle missing data.
The discussion should include the views of the authors on what were the difficulties of implementation, how they overcame them, and what they consider they still have to achieve.

We have added a second paragraph in page 15 discussing the reasons of the lack of compliance and suggesting methods to improve the compliance.

**What was the length of stay in the 12 centres before the programme was introduce?**

We have added a paragraph comparing the length of stay of the enhanced recovery program and other recently published data in Spain. Please see page 15, last paragraph.

**The abstract should contain a statement on length of stay.**

We have added the sentence: “The median length of postoperative hospital stay was 6 days.” To the abstract of the manuscript.