

**Surgical Stress Reduction in Elderly Patients Undergoing Elective Colorectal Laparoscopic Surgery within an ERAS Protocol**

Giulio Mari, Andrea Costanzi, Jacopo Crippa, Rosanna Falbo, Angelo Miranda, Michele Rossi, Valter Berardi, Dario Maggioni  
Department of General Surgery, ASST Monza, Desio Hospital, Desio Italy

**Abstract**

ERAS program applied to colorectal laparoscopic surgery is well known to reduce hospitalization improving short terms outcomes and minimizing the Surgical Stress Response. However its effectiveness in elderly population is yet to be demonstrated. The primary aim of this study is to compare the level of immune and nutritional serum indexes across surgery in patients aged over 70 years old undergoing elective colorectal laparoscopic surgery within an ERAS protocol or according to a Standard program. 83 patients undergoing colorectal laparoscopic surgery were enrolled and randomized in two groups (ERAS Group 40, Standard Group 43) within a larger randomized trial on a general population. Surgical stress parameters were collected preoperatively, 1, 3 and 5 days after surgery. Nutritional parameters were collected preoperatively, 1 and 5 days after surgery. Short Term Outcomes were also prospectively assessed. IL-6 levels were lower in the EG on 1, 3, and 5 days post-operatively ( $p < 0.05$ ). IL-6 levels in the Enhanced group returned to pre operative level 3 days after surgery. C-reactive protein level was lower in the Enhanced group on day 1, 3, and 5 ( $p < 0.05$ ). There was no difference in Cortisol and Prolactin levels between groups. Prealbumin serum level was higher on day 5 ( $p < 0.05$ ) compared to standard group. Postoperative outcomes in terms of normal bowel function and length of hospital stay were significantly improved in the ERAS group. Colorectal laparoscopic surgery within an ERAS protocol in elderly patients affects Surgical Stress Response, decreasing IL-6 and CRP levels post-operatively and improving Prealbumin post operative synthesis.

**Key words:** surgical stress response, colorectal surgery, elderly patients, enhanced recovery program