

## EDITORIAL

## Nutrition and enhanced recovery programmes in adult surgery<sup>☆</sup>



### Nutrición y programas de recuperación intensificada en cirugía del adulto

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A little over two decades ago, coinciding with the important advances in anaesthetic techniques and minimally invasive surgery, a new multidisciplinary medical-surgical care model began to be developed in the perioperative management of surgical patients, which in Europe is called *Enhanced Recovery After Surgery* (ERAS)<sup>1</sup> and is known in Spain as *recuperación intensificada en cirugía del adulto* (RICA) [enhanced recovery in adult surgery] or multimodal rehabilitation in surgery. These programmes are based on the original idea of Professor Henrik Kehlet who in the 1990s sought painless and risk-free surgery.<sup>2,3</sup>

The purpose of ERAS programmes is to mitigate the metabolic response to surgical stress and thereby achieve a faster functional recovery of the patient, reducing postoperative complications, hospital stay and health costs.<sup>4</sup>

Four fundamental principles underlie the concept of enhanced recovery after surgery: 1) preoperative optimisation to ensure that the patient is in the best possible condition directly before the surgery, 2) the application of a set of proactive perioperative measures and strategies, 3) the active participation of the patient throughout their surgical process, making them responsible for their own recovery and 4) multidisciplinary understood to be the close and structured collaboration of all the health professionals involved.<sup>5</sup>

Since its inception, one of the focuses of attention and a key component in the ERAS programmes has been metabolism and nutrition, whose objective is focused on restoring energy deficit, minimising loss of muscle mass, improving insulin sensitivity and preserving gut microbiota.<sup>6</sup> Some of the metabolic and nutritional strategies included in these ERAS programmes are preoperative nutritional optimisation, avoiding long periods of preoperative fasting, treatment with oral carbohydrates, control of fluid and saline balance and perioperative glycaemia, reestablishing oral nutrition as soon as possible after surgery and early mobilisation.<sup>6–9</sup> For all these reasons, the multidisciplinary team needed to implement an ERAS programme would not be complete and could not be understood without the presence of a specialist in endocrinology and nutrition.<sup>5</sup>

In 2008, the Grupo Español de Rehabilitación Multimodal (GERM) [Spanish Multimodal Rehabilitation Group], was founded, which is a multidisciplinary working group whose main objective is focused on the implementation of ERAS programmes in Spain. To achieve this, it has had the support and close collaboration of different national and international scientific organisations, including the Sociedad Española de Endocrinología y Nutrición (SEEN) [Spanish Society of Endocrinology and Nutrition].

As a result of the collaboration between the GERM and the Ministry of Health, the ERAS clinical pathway was published in 2015 with the aim of reducing the variability of clinical healthcare practice in Spain by providing an interdisciplinary consensus document to improve postoperative recovery, while maintaining patient safety and optimising the use of resources.<sup>10</sup> This document has just been updated and was published in May 2021. The update offered by this new ERAS pathway is that, in addition to being sup-

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ported by the latest available scientific evidence, other areas of surgery (thoracic, cardiovascular, traumatology, etc.) have been incorporated, and therefore recommendations are presented for most adult patients undergoing scheduled surgery.<sup>5</sup> From the metabolic and nutritional point of view, as part of this ERAS 2021 pathway, in addition to updating some items that already existed in the 2015 pathway, such as preoperative nutritional assessment, perioperative fasting, the use of carbohydrate drinks and perioperative glycaemic control, new recommendations are provided related to preoperative nutritional intervention or more controversial issues such as perioperative immunonutrition or carbohydrate drinks in patients with diabetes and obesity.<sup>5</sup>

The relationship between the Nutrition Department of SEEN and GERM has been strengthening bidirectionally since 2008 to the point where a specialist in endocrinology and nutrition is now part of the GERM board of directors. Some examples of this close collaboration are reflected in the direct participation of endocrinologists in the development of the RICA [ERAS] 2021 pathway<sup>5</sup> or the IMPRICA (Plan de Implementación Nacional de la Vía RICA [ERAS Pathway National Implementation Plan]) project or the COM-PRICA (paciente complicado en vía RICA [ERAS Pathway Complicated Patient]) project. On the other hand, GERM has endorsed the SEEN Virtual Classroom module "how to recover better from a surgical intervention: multimodal rehabilitation programmes"<sup>11</sup> and some of its members have collaborated with activities in the Nutrition Department such as the NutriSEEN Virtual Forum and the NutRICA project, the results of which are published in the original section of this same issue of the journal.<sup>12</sup>

The purpose of the NutRICA project was to prepare a consensus document where the nutritional and metabolic management of patients included in a ERAS programme would be homogenised.<sup>12</sup> 73 members from the Nutrition Department of SEEN and 120 members of GERM were registered, which gives us an idea of the growing interest of endocrinology and nutrition specialists in ERAS programmes and the progressive awareness of surgeons in relation to the negative effect that malnutrition exerts on postoperative clinical outcomes. Regarding the results obtained, in summary we can conclude that of the 79 nutritional and metabolic strategies included in the Delphi questionnaire, consensus was reached for 61 of them (77.2%). It is also recorded that for some key points such as the assessment of muscle mass, the start of early feeding or pharmacotherapy, there was a lack of agreement and no consensus was reached.<sup>12</sup>

Despite the fact that these results are very positive and confirm this close collaboration that has made it possible to specify and agree on a nutritional approach throughout the perioperative period, to this day many hospitals in our country have not yet fully implemented ERAS or there is no proper compliance with some metabolic or nutritional strategies. In a Spanish, multicentre, prospective cohort study, it was demonstrated that those patients with high compliance with ERAS strategies had a lower risk of complications (OR, 0.33; 95% CI, 0.26–0.43;  $p < 0.001$ ) and mortality (OR, 0.27; 95% CI, 0.07–0.97;  $p = 0.06$ ).<sup>13</sup> In this study, it was recorded that the percentage of compliance in Spanish hospitals with some important nutritional strategies such as preoperative

nutritional optimisation, early resumption of postoperative feeding or the use of carbohydrate drinks was 64%, 47% and 39%, respectively.<sup>13</sup> GERM has accredited 22 hospitals with excellence in enhanced recovery.

The SEEN-GERM collaboration also goes through the training of professionals and the search for new evidence, regarding, for example, the assessment of muscle mass or the benefits of immunonutrition in surgical patients, areas in which, as we have seen, there are still many issues to be determined and clarified. In this sense, a face-to-face training course in body composition and muscle assessment techniques is being developed for endocrinologists and surgeons from the 22 hospitals of excellence in ERAS.

In summary, metabolic and nutritional therapy is an important part of the perioperative management of the surgical patient. To achieve success in the development and implementation of an ERAS programme, the multidisciplinary team must have a specialist in endocrinology and nutrition.

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