

Immunonutrition within enhanced recovery after surgery (eras): an unresolved matter

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Although there is clear evidence that sarcopenia, malnutrition, and a high arginase activity state in isolation or in combination contribute to adverse surgical outcomes, the precise combination of nutrients remains unclear. A further challenge of the extant literature is that the majority of assessed studies had small sample size (<100) and no current study has used current markers of these nutritionally impaired states. A second area of concern is the wide mix of surgical pathology and procedures with distinct risks and associated comorbidities grouped into these large metaanalyses. The assumption that the nutritional needs and catabolic state are the same for these very different clinical scenarios is a major gap in current knowledge. Finally, most of the recommended nutritional formulas contain arginine, omega-3 fatty acids, carbohydrate/protein ratios, and glutamine all of which have been associated with neutral to negative outcomes in large randomized trials in critically ill patients. Thus, the issue of how best to implement immunonutrition within an ERAS framework remains unresolved. Future research into this area should look to group patients based on preoperative risk adjustment using both image guided assessment of sarcopenia and biomarker assessment of the nutritional and inflammatory state of populations of patients. Likely candidates are CT measured sarcopenia scores, ultrasound assessment of rectus femoris, nutritional metabolic scores, systemic methylarginines, ornifine:citrulline ratio, and proline:citrulline ratio across the perioperative period in patients undergoing colorectal surgery within an ERP program with a robust historical data set of specific outcomes.

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