

ORIGINAL ARTICLE

# Evaluation of an enhanced recovery protocol after pancreaticoduodenectomy in elderly patients

S. Partelli<sup>1,3</sup>, S. Crippa<sup>1,3</sup>, R. Castagnani<sup>1</sup>, G. Ruffo<sup>2</sup>, C. Marmorale<sup>1</sup>, A.M. Franconi<sup>1</sup>, C. De Angelis<sup>1</sup> & M. Falconi<sup>1,3</sup>

<sup>1</sup>Department of Surgery and Anesthesiology, Università Politecnica delle Marche, Ancona, and <sup>2</sup>Department of Surgery, Ospedale "Sacro Cuore-Don Calabria", Negrar, Italy

## Abstract

**Background:** Recent evidence has shown that enhanced recovery after surgery (ERAS) protocols decrease hospital stay following pancreaticoduodenectomy (PD). The aims of this study were to assess the feasibility and to evaluate the effect of introducing ERAS principles after PD in elderly patients.

**Methods:** Patients  $\geq 75$  years were defined as elderly. Comparison of postoperative outcome was performed between 22 elderly patients who underwent ERAS (elderly ERAS + patients) and a historical cohort of 66 elderly patients who underwent standard protocols (elderly ERAS- patients).

**Results:** The lowest adherence with ERAS among elderly patients was observed for starting a solid food diet within POD 4 ( $n = 7$ ) and early drains removal ( $n = 2$ ). The highest adherence was observed for post-operative glycemic control ( $n = 21$ ), epidural analgesia ( $n = 21$ ), mobilization ( $n = 20$ ) and nasogastric removal in POD 0 ( $n = 20$ ). Post-operative outcomes did not differ between elderly ERAS+ and elderly ERAS- patients. In patients with an uneventful postoperative course, the median intention to discharge was earlier in elderly ERAS + patients as compared to the elderly ERAS- patients (4 days versus 8 days,  $P < 0.001$ ).

**Conclusion:** An ERAS protocol following PD seems to be feasible and safe among elderly although it is not associated with improved postoperative outcomes.

Received 21 September 2015; accepted 22 September 2015

## Correspondence

Massimo Falconi, Pancreatic Surgery Unit, IRCCS San Raffaele Hospital, "Vita-Salute" University, Via Olgettina 60, 20132 Milan, Italy. Tel: +39 02 2643 6020. E-mail: [falconi.massimo@hsr.it](mailto:falconi.massimo@hsr.it)

## Introduction

By the end of the 1990s some Authors proposed an optimized management of perioperative care for elective surgical patients.<sup>1,2</sup> This enhanced recovery after surgery (ERAS) program includes a multimodal rehabilitation approach that accelerates recovery decreasing post-operative morbidity and hospital stay after surgical procedures.<sup>3-5</sup> ERAS or fast-track surgery methods include minimally invasive techniques, optimal pain control, and aggressive postoperative rehabilitation, including early enteral (oral) nutrition and ambulation.<sup>6</sup> The benefits of introducing ERAS programs have been consistently demonstrated, particularly in colorectal cancer.<sup>7-9</sup> Several studies have demonstrated

that ERAS is effective in reducing length of hospital stay and overall complications rate across different surgical specialties.<sup>10,11</sup> Despite mounting evidence for improved outcomes for other surgical procedures, many pancreatic surgeons have remained skeptical that such results can be achieved following pancreaticoduodenectomy (PD). Nevertheless some studies have recently demonstrated that an ERAS protocol is safe and feasible for pancreatic surgery.<sup>12</sup> Only one study<sup>13</sup> has investigated the feasibility of this approach in elderly patients. Although there are no studies that suggest that age should be a criterion for exclusion from ERAS protocols, older patients' attitudes to ERAS may represent a barrier to the implementation of such a protocol.<sup>14</sup> The aims of this study were i) to assess the compliance to an ERAS protocol following PD in elderly patients and ii) to evaluate the effect on postoperative outcomes after introducing ERAS in this population.

Current affiliation: Pancreatic Surgery Unit, IRCCS San Raffaele Hospital, "Vita-Salute" University, Milan, Italy.

## Methods

### Study population

This was a retrospective, observational study. Given the retrospective nature of the study, ethical committee approval was waived. Since January 2013 an ERAS protocol was introduced at the Department of Surgery of Ancona University. Overall, 102 consecutive patients agreed to participate in the ERAS protocol following PD and signed an informed consent. Of those, 22 (21%) patients were  $\geq 75$  years of age and were defined as the elderly group. The remaining 80 patients  $< 75$  years represented the control group in the assessment of ERAS compliance.

### Perioperative management and assessment of ERAS compliance

The ERAS protocol was inspired by the recommendations proposed by the ERAS society.<sup>15</sup> Table 1 shows differences between previously adopted perioperative care protocol and the ERAS pathway. Several items differed from those proposed by the ERAS society.<sup>15</sup> In particular, i) preoperative biliary drainage was always carried out in the presence of jaundice with conjugated bilirubin  $> 5$  mg/dL, ii) carbohydrate supplementation drinks

were avoided, and iii) oral laxatives were not routinely used. A pylorus-preserving PD with standard lymphadenectomy was the preferred operation. The reconstruction phase included an end-to-side duct-to-mucosa pancreatico-jejunostomy. Fluid balance was monitored using the FloTrac<sup>®</sup> sensor (Edwards Lifesciences LLC, One Edwards Way-Irvine, CA, USA).

### Evaluation of ERAS efficacy in elderly patients

A 3:1 case-matched study design was used. Comparisons were performed between 22 elderly patients who underwent ERAS protocol (Elderly ERAS + patients) and a matched group of 66 elderly patients who underwent previously adopted protocol before the implementation of the ERAS program (Elderly ERAS-patients). All these 66 patients were operated by the same surgical team at another institution (Ospedale "Sacro Cuore-Don Calabria") between 2009 and 2012. Patients were matched 1:3 by age, Body Mass Index (BMI), American Society of Anesthesiology (ASA) score, and Fistula Risk Score (FRS). Complications were defined and classified according to Dindo *et al.*<sup>16</sup> Pancreatic fistula (PF) was defined according to the International Study Group of Pancreatic Fistula (ISGPF) as any

**Table 1** Main differences between previously adopted perioperative care protocol and ERAS items following pancreatico-duodenectomy (PD)

Item	Standard protocol	ERAS pathway
Preoperative counseling	At surgeon's discretion	Yes
Preoperative biliary drainage	Yes	Yes
Preoperative nutrition	No	No
Bowel preparation	At surgeon's discretion	No
Pre-anesthetic medication	No	No
Anti-thrombotic prophylaxis	Yes	Yes
Antimicrobial prophylaxis	Yes (30–60 min before incision)	Yes (30–60 min before incision)
Epidural analgesia	At anesthetist's discretion and/or if not contraindicated	Yes (mid-thoracic)
Stop of analgesia	At anesthetist's discretion	Within POD3
Intravenous analgesia	At anesthetist's discretion and/or if epidural analgesia contraindicated	No
Incision	Midline laparotomy	Midline laparotomy
Avoiding hypothermia	Always	Always
Postoperative glycemic control	Subcutaneous or intravenous insulin at anesthetist discretion	Intravenous insulin
Nasogastric intubation	At surgeon's discretion	POD0 removal
Fluid balance	At anesthetist's discretion	Near-zero balance, balanced crystalloids
Perianastomotic drains removal	At surgeon's discretion	Within POD3 if AVD $< 2000$ U/l in POD1
Somatostatin analogs	At surgeon's discretion	No
Urinary drainage	Transurethral catheterization for 2–3 days	Urinary catheter removal within POD3
Postoperative nutrition	At surgeon's discretion	Liquid and soft diet in POD1-2, solid food within POD4
I.V. fluid withdrawal	At surgeon's discretion	Within POD4
Early mobilization	Always in POD1	Always in POD1

POD, Postoperative day; AVD, Amylase value in drains.

Download English Version:

<https://daneshyari.com/en/article/3268502>

Download Persian Version:

<https://daneshyari.com/article/3268502>

[Daneshyari.com](https://daneshyari.com)