Clinical Nutrition xxx (2016) 1–12

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Meta-analyses

Optimal postoperative nutrition support for patients with gastrointestinal malignancy: A systematic review and meta-analysis

Yan Xia, Fu-xiang Zhou*, Tian Lan, hui Xu, xiao-xi Yang, Cong-hua Xie, Jing Dai, Zhen-ming Fu, Yan Gao, Lu-lu Chen

Zhongnan Hospital of Wuhan University, Department of Oncology, Wuhan University, Wuhan, 430071, China

ARTICLE INFO

Article history:
Received 10 December 2015
Accepted 15 June 2016

Keywords:
Parenteral nutrition
Enteral nutrition
Immune
Gastrointestinal cancer
Surgery
Meta-analysis

SUMMARY

Objective: To improve clinical outcomes, parenteral nutrition, standard enteral nutrition and immune-enhanced nutrition are widely used in the gastrointestinal tumor patients undergoing surgery, but the optimal management of postoperative nutrition support remains uncertain.

Methods: We systematically searched the PUBMED, EMBASE and CNKI to identify latent studies which the effects of standard EN compared with PN or IEN on gastrointestinal tumor patients until the end of November, 2015. The quality of included trials was assessed according to the handbook for Cochrane reviewer. Statistical analysis was carried out by RevMan5.1 software.

Results: 30 randomized controlled trials containing 3854 patients were contained in our meta-analysis, the results indicated that postoperative SEN could absolutely reduce the incidence of postoperative infectious ($P < 0.00001$) and non-infectious complications ($P = 0.0003$), together with its positive effect on the length of hospital stay ($P < 0.00001$). Additionally, enteral nutrition enhanced with immune stimulation was confirmed to be better, with a significant difference between groups in terms of total infectious ($P < 0.00001$) and non-infectious complications ($P = 0.04$), and IEN could also significantly shorten the length of hospital stay ($P < 0.00001$).

Conclusion: Early use of Enteral nutrition in digestive tumor patients after surgery could significantly reduce the postoperative complications and shorten the length of hospital stay, IEN should be the optimal management, while the use of parenteral nutrition should be restrict to few patients with severe intolerance to enteral nutrition.

© 2016 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Introduction

Patients received elective gastrointestinal operations due to malignant tumor are at high risk of developing postoperative infectious, such as wound infection (WI), respiratory tract infection (RTI) etc [1], some evidence suggests that malnutrition is the most important factor [2–4]. Therefore, nutrition management is essential for patients received elective gastrointestinal operations.

Energy needed for the body could be covered either by enteral nutrition (EN) or parenteral nutrition (PN). Several studies have reached the same conclusion that enteral route was better for some patients, some other studies even found that application of PN in patients did more harm than good. Therefore [11–32], EN is recommended in patients requiring nutrition support based on ESPEN guidelines, but there are still some centers prefer PN than EN [7,8].

As one of postoperative management, nutrition support was not only needed for pure energy supplement, but also for restoring immune function. Thus, immunonutrition was put forward, which aimed to relieve immune and inflammatory responses induced by surgery via the use of essential immune elements, like arginine, glutamine, omega-3-fatty acids, and nucleotides. Several trials in patients undergoing general surgery indicated that early EN with immune modulating formula could decrease postoperative complications in both undernourished and well-nourished patients [10] Therefore, immunonutrition highly recommended by ESPEN guideline in patients undergoing major cancer surgery [8].

However, as Federico Bozzetti mentioned [4], clinical practice guidelines (CPGs), which aimed to offer recommendations based on good research, have made little progress to modulate its situation

* Corresponding author.
E-mail address: fxzhouwhu@gmail.com (F.-x. Zhou).

http://dx.doi.org/10.1016/j.clnu.2016.06.011
0261-5614/© 2016 The Author(s). Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Please cite this article in press as: Xia Y, et al., Optimal postoperative nutrition support for patients with gastrointestinal malignancy: A systematic review and meta-analysis, Clinical Nutrition (2016), http://dx.doi.org/10.1016/j.clnu.2016.06.011

UNCORRECTED PROOF

Table 1
Search terms (PICO strategy) used for search strategy.

PICO' criteria	Descriptions and search terms used for each criteria
Patients	Patients with gastrointestinal cancer after surgery (esophageal or Esophagus or gastrointestinal OR gastric OR intestinal or Pancreatic or colorectal) AND (cancer OR tumor OR neoplasms or carcinoma) AND (operation OR operated OR postoperative OR gastrectomy OR pancreatectomy OR pancreaticojejunostomy)
Intervention	EN or PN or IEN ("enteral nutrition" OR "parenteral nutrition" OR "artificial feeding" OR "nutritional support" OR immune or immunol)
Comparisons	Comparison between SEN and TPN or IEN and SEN ("randomized controlled trial")
Outcomes	Morbidity ("infectious complication" OR "non-infectious complication" OR "respiratory infection", OR "urinary infection" OR "wound infection" OR "abscess" OR "anastomotic leakage" OR "delayed gastric emptying" OR "hemorrhage"), length of hospital stay ("length of hospital stay" OR "hospitalization" OR "time in hospital"), mortality (mortality OR death OR dead)

that most of recommendations were base on low-grade research evidence (Grade A, 15.8%; Grade B, 28.2%; and Grade C, 56.0%).

Therefore, proceeding from the current situation mentioned above, we conducted a meta-analysis of randomized controlled trials (RCTs) to systematically review the effect of TPN, SEN and IEN in patients undergoing gastrointestinal surgery, and to explore the most favorable nutrition therapy for gastrointestinal tumor patients undergoing surgery, and attempt to provide higher-grade evidence to CPGs recommendations.

2. Materials and methods

2.1. Search strategy

We carried out this systematic review and meta-analysis in accordance with Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) statement [47] and Cochrane Handbook for Systematic Reviews of Intervention [47]. The electronic databases PubMed, Embase, CNKI were searched for eligible studies from the inception of each database to October 31, 2105, and the search was carried out using the combination of search terms shown in Table 1.

Additionally, the search was carried out following the PICO strategy, and was restricted to studies with a main body in English or Chinese, but free to sample size. The selection began with review of titles and abstracts, but if it was not sufficient to make judgments, the full-texts followed. At the same time references of the identified studies were also manually searched to locate the probable related studies. All searches were conducted by two independent investigators, and conflicts were all resolved by discussing.

2.2. Inclusion and exclusion criteria

The eligibility criteria for this study were as follows: 1 study designed as randomized controlled trial (RCTs); 2 patients received surgery were pathologically diagnosed as gastrointestinal cancer (including esophagus, gastric, pancreas, and colorectal). 3 RCTs aimed at comparing the clinical outcomes between PN and EN or between IEN and SEN. 4 the nutritional support was postoperative.

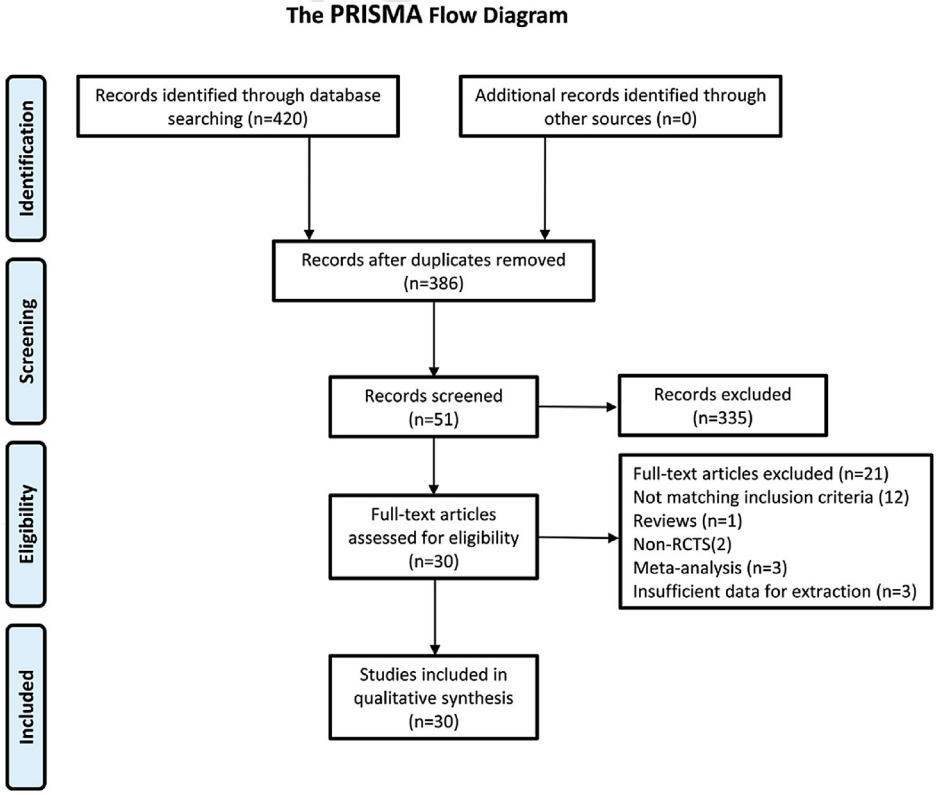

Fig. 1. Flow chart of study selection.

Please cite this article in press as: Xia Y, et al., Optimal postoperative nutrition support for patients with gastrointestinal malignancy: A systematic review and meta-analysis, Clinical Nutrition (2016), http://dx.doi.org/10.1016/j.clnu.2016.06.011

Download English Version:

https://daneshyari.com/en/article/5571965

Download Persian Version:

https://daneshyari.com/article/5571965

Daneshyari.com