



Systematic review of nasogastric or nasojejunal decompression after gastrectomy for gastric cancer

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Abstract

Background: The aim of this meta-analysis was to evaluate the necessity of nasogastric or nasojejunal decompression after gastrectomy for gastric cancer.

Methods: Medline, Embase and the Cochrane Library were searched. Only prospective randomized controlled trials (RCTs) that compared subjects with and without nasogastric or nasojejunal decompression after gastrectomy were eligible in this meta-analysis. Time to flatus, time to first oral intake, length of hospital stay, reinsertion rate, anastomotic leakage, pulmonary complications, morbidity and mortality were evaluated.

Results: Eight studies finally fulfilled the inclusion criteria. This meta-analysis enrolled 1141 patients, 570 randomized to routine decompression and 571 randomized to no decompression. Time to first oral intake was significantly shorter in the non-decompression group ($WMD = 0.53$, 95% CI : 0.28 to 0.77; $p < 0.001$). Additionally, subjects with nasogastric or nasojejunal decompression experienced a longer hospital stay ($p = 0.001$). Time to flatus, anastomotic leakage, reinsertion rates, pulmonary complications, morbidity and mortality rates were similar between the two groups.

Conclusion: Nasogastric or nasojejunal decompression does not facilitate the recovery of bowel function or reduce the risk of postoperative complications. Therefore, routine nasogastric or nasojejunal decompression is unnecessary after gastrectomy for gastric cancer.

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Keywords: Gastric cancer; Gastrectomy; Nasogastric decompression; Nasojejunal decompression

Introduction

Nasogastric or nasojejunal decompression has been introduced into the treatment of acute intestinal obstruction and postoperative ileus since the 1930s.¹ It was considered that nasogastric or nasojejunal decompression could be either

therapeutic or diagnostic approaches in major abdominal operations. Nowadays, such decompressions are considered to be unnecessary after colorectal surgery.^{2,3} However, until relatively recent such decompressions have still been used in operations for gastric cancer as a prophylactic measure and described as “the standard of care” and “common practice”.⁴

Nasogastric or nasojejunal decompression was once considered to be necessary to decrease postoperative ileus (nausea, vomiting, and gastric distension) and to reduce anastomotic leakage after gastrectomy. However, the necessity of nasogastric decompression following elective gastrectomy among gastric cancer patients has been increasingly debated over the last several years. Several randomized and non-

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randomized trials were performed to evaluate the efficacy of nasogastric or nasojejunal decompression after gastrectomy.^{5–14} A meta-analysis included 5 small randomized trials of only 717 patients indicated that routine nasogastric or nasojejunal decompression was not necessary after gastrectomy for gastric cancer.¹⁵ However, this meta-analysis had some limitations. First, the sample size of this systematic analysis was limited. It was published in 2008 and excluded some continuous outcomes reported in the form of median, which led to a smaller sample size. In addition, several randomized clinical trials^{10–12} have been published after 2008. Therefore, it is necessary to carry out another meta-analysis with a larger sample size to evaluate the necessity of nasogastric or nasojejunal decompression after gastrectomy for gastric cancer. There was still another meta-analysis collected 8 trials regarding the necessity of indwelling gastrointestinal decompressions after gastrectomy.¹⁶ However, it included some studies incorporating gastrectomy for benign diseases. Compared to benign diseases, gastrectomy for gastric cancer is often combined with lymph nodes dissection (especially D2 and D3), which may increase surgical morbidity and gut dysfunction. Thus, it is necessary to conduct a meta-analysis to evaluate the necessity of nasogastric or nasojejunal decompression after gastrectomy for gastric cancer.

Methods and materials

Literature search

To identify all published clinical studies evaluating nasogastric or nasojejunal decompression after

gastrectomy, a comprehensive search of medical databases (Medline, Embase and the Cochrane Library) were performed using the terms nasogastric decompression, nasojejunal decompression, gastrointestinal decompression, nasogastric tube insertion, gastrectomy and gastric cancer surgery (Fig. 1).

Inclusion criteria and exclusion criteria

The inclusion criteria were (1) studies comparing nasogastric or nasojejunal decompression with no nasogastric or nasojejunal decompression after gastrectomy; (2) prospective RCTs; (3) clinical studies contained patients underwent gastrectomy for gastric cancer between 1921 and 2013; (4) English language publications.

The following articles were excluded: (1) emergency surgery; (2) non-randomized trials; (3) articles not reporting outcomes of interest; (4) duplicate publication.

Data extraction

Data were extracted independently by two authors (ZW Wei and JL Li) and cross-checked to reach consensus. The following characteristics were extracted for each study: author, publication date, journal, number of patients, research design, geographical region, type of operation, time to first flatus, time to first oral intake, reinsertion of tubes, anastomotic leakage, pulmonary complications, and length of hospital stay, morbidity and mortality. This study was approved by the Ethical Review Committee of Sun Yat-sen University.

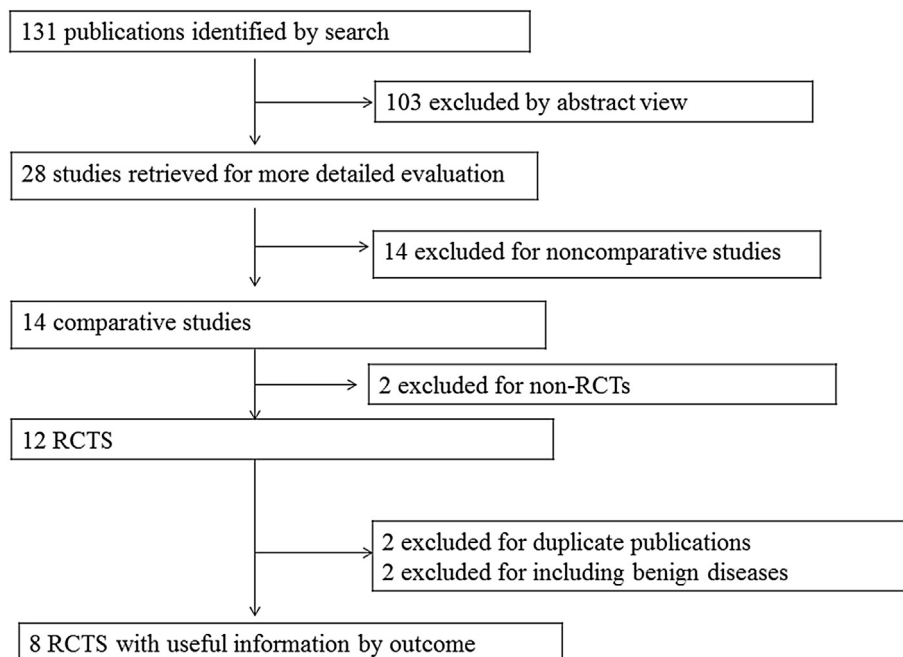


Figure 1. Systematic search and selection strategy.

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