



# PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
<b>TITLE</b>			
Title	1	<b>Comparison between uncut Roux-en-Y and Roux-en-Y reconstruction after distal gastrectomy for gastric cancer: A meta-analysis</b>	1
<b>ABSTRACT</b>			
Structured summary	2	<b>AIM</b> The present meta-analysis was performed to compare uncut Roux-en-Y (U-RY) gastrojejunostomy with Roux-en-Y (RY) gastrojejunostomy after distal gastrectomy (DG) for gastric cancer. <b>METHODS</b> A literature search was conducted in Pubmed, Embase, Web of Science, Cochrane Library, Science Direct, Chinese National Knowledge Infrastructure, Wanfang, and China Science and Technology Journal Database to identify studies comparing U-RY with RY after DG for gastric cancer until the end of December 2017. Pooled odds ratios or weighted mean difference with 95% confidence interval was calculated using either fixed- or random-effects models. Perioperative outcomes such as operative time, intraoperative blood loss, and hospital stay; postoperative complications such as anastomotic bleeding, stricture and ulcer, reflux gastritis/esophagitis, delayed gastric emptying, and Roux stasis syndrome; and postoperative nutritional status (serum hemoglobin, total protein, and albumin levels) were the main outcomes assessed. Meta-analyses were performed using RevMan 5.3 software. <b>RESULTS</b> Two randomized controlled trials and four nonrandomized observational clinical studies involving 403 and 488 patients, respectively, were included. The results of the meta-analysis showed that the operative time, incidence of reflux gastritis/esophagitis, delayed gastric emptying, and Roux stasis syndrome were reduced in patients undergoing U-RY reconstruction compared with those undergoing RY reconstruction. <b>CONCLUSION</b> U-RY reconstruction had some clinical advantages over RY reconstruction after DG.	2, 3
<b>INTRODUCTION</b>			
Rationale	3	Gastric cancer is one of the most common malignant tumors of the gastrointestinal tract, which poses a serious threat to people's survival. At present, the choice of gastrointestinal reconstruction after DG for distal gastric cancer remains controversial.	3
Objectives	4	This meta-analysis was performed to compare the U-RY with RY reconstruction after DG for gastric cancer in terms of perioperative outcomes, postoperative complications, and postoperative nutritional status.	4
<b>METHODS</b>			
Protocol and registration	5	None.	N/A



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Eligibility criteria	6	The inclusion criteria were as follows: (1) Patients with gastric cancer undergoing DG; (2) studies comparing U-RY and RY reconstruction; (3) studies reporting at least one of the outcomes mentioned; (4) original reports with $\geq 10$ patients; and (5) studies published in English or Chinese.  The exclusion criteria were as follows: (1) Abstract, case reports, literature review, expert opinions, basic researches, and animal experiments; (2) studies without available data or full text; (3) studies involving patients with gastric cancer undergoing total gastrectomy; and (4) studies including patients with benign disease.	5, 6
Information sources	7	The clinical studies about the comparison of U-RY and RY reconstruction after DG for gastric cancer were collected from PubMed, Embase, Web of Science, Cochrane Library, Science Direct, Chinese National Knowledge Infrastructure, Wanfang, and VIP databases until the end of December 2017.	5
Search	8	“Uncut Roux-en-Y” was used as the medical subject heading and the key word. A manual screening of the reference lists of all included studies was also performed for extra potentially eligible studies.	5
Study selection	9	Randomized controlled trials (RCTs) and nonrandomized observational clinical studies (OCS) with complete full text were included	5
Data collection process	10	Two independent reviewers studied the full text of the eligible studies and extracted the research data. In the case of any disagreement, the consensus was reached in consultation with a third researcher.	5
Data items	11	The data extracted from the studies included population characteristics (study year, country, design, gender, and mean age) and outcome indexes (perioperative outcomes, postoperative complications, and postoperative nutritional status).	7
Risk of bias in individual studies	12	See subgroup analysis and sensitivity analysis.	13, 14
Summary measures	13	Dichotomous variables were analyzed by estimating the risk ratio with 95% confidence interval (CI), and continuous variables were analyzed using the weighted mean difference (WMD) with 95% CI. A P value $< 0.05$ was considered as a statistically significant difference.	7
Synthesis of results	14	A chi-square test was used to assess the homogeneity of effect sizes to decide the $I^2$ value before meta-analysis. A random-effects model was used when significant heterogeneity existed ( $I^2 > 50\%$ ). If the heterogeneity was not significant ( $I^2 < 50\%$ ), a fixed-effects statistical model was used.	7

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Risk of bias across studies	15	The funnel plot was constructed to detect potential publication bias.	15
Additional analyses	16	Moreover, if the heterogeneity was high, subgroup and sensitivity analyses were performed to find the source of the heterogeneity. The funnel plot was constructed to detect potential publication bias.	13-15



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<b>RESULTS</b>			
Study selection	17	The results of the search strategy are shown in Figure 1.	5
Study characteristics	18	The characteristics of studies included in the meta-analysis are shown in Tables 3 and 4.	7-9
Risk of bias within studies	19	See subgroup analysis and sensitivity analysis.	13-14
Results of individual studies	20	(See forest plot and manuscript).	10-13
Synthesis of results	21	See Table 5.	9
Risk of bias across studies	22	(See Item 15).	10
Additional analysis	23	(See Item 16).	10
<b>DISCUSSION</b>			
Summary of evidence	24	In conclusion, the present meta-analysis indicated that U-RY reconstruction after DG for gastric cancer was secure and feasible. It had several advantages, such as less operative time, low incidence of reflux gastritis/esophagitis, delayed gastric emptying, and Roux stasis syndrome.	19
Limitations	25	However, it also had several limitations. First, only two RCTs were included in this study. Second, the relatively small sample size had a certain effect on the results. Lastly, the studies included were only conducted in China and Korea, lacking multicenter researches. Therefore, high-quality RCTs in multiple centers are still needed for further confirmation.	19
Conclusions	26	U-RY reconstruction had some clinical advantages over RY reconstruction after DG.	19
<b>FUNDING</b>			
Funding	27	Jiangsu province fund projects for "Six Talent Peaks" high-level talent (NO.2016-WSN-007).	1

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