

Rowan University

## Rowan Digital Works

---

Rowan-Virtua Research Day

28th Annual Research Day

---

May 2nd, 12:00 AM

# Comparative Analysis of Health Outcomes in Gastric Cancer: Robotic vs. Laparoscopic Gastrectomy

Maftuna Kurbonnazarova  
*Rowan University*

Follow this and additional works at: [https://rdw.rowan.edu/stratford\\_research\\_day](https://rdw.rowan.edu/stratford_research_day)



Part of the [Digestive System Diseases Commons](#), [Gastroenterology Commons](#), [Health Services Research Commons](#), [Neoplasms Commons](#), [Oncology Commons](#), [Surgery Commons](#), and the [Surgical Procedures, Operative Commons](#)

Let us know how access to this document benefits you - share your thoughts on our [feedback form](#).

---

Kurbonnazarova, Maftuna, "Comparative Analysis of Health Outcomes in Gastric Cancer: Robotic vs. Laparoscopic Gastrectomy" (2024). *Rowan-Virtua Research Day*. 22.  
[https://rdw.rowan.edu/stratford\\_research\\_day/2024/may2/22](https://rdw.rowan.edu/stratford_research_day/2024/may2/22)

This Poster is brought to you for free and open access by the Conferences, Events, and Symposia at Rowan Digital Works. It has been accepted for inclusion in Rowan-Virtua Research Day by an authorized administrator of Rowan Digital Works.



# Comparative Analysis of Health Outcomes in Gastric Cancer: Robotic vs. Laparoscopic Gastrectomy

Maftuna Kurbonnazarova

OMS II | Rowan-Virtua School of Osteopathic Medicine

## Background:

Gastric cancer ranks as the fifth most prevalent cancer globally, holding the fourth position in men and the seventh in women<sup>1</sup>. Despite a decreasing trend in new cases of gastric cancer in the United States, its prevalence remains notable, with approximately 26,500 new cases and 11,130 deaths reported in 2023<sup>2</sup>. For localized gastric cancer (stage IB-III), the primary therapeutic approach involves gastric resection (gastrectomy) with negative resection margins, adequate lymphadenectomy (LND), and perioperative chemotherapy. To ensure optimal oncologic safety, a standard D2 lymphadenectomy, with a minimum of 16 retrieved lymph nodes, is recommended, with the number of harvested lymph nodes and resection margins serving as critical indicators of the procedure's effectiveness. Although laparoscopic gastrectomy is the preferred method, there is a growing interest in robotic gastrectomy (RG) as an attractive alternative to conventional laparoscopic approaches. RG introduces several advancements, including complete tremor filtering, a 3D stereoscopic HD view with magnification, seven degrees of freedom in instrument motion, a shorter learning curve, and improved surgeon dexterity for intricate manipulations<sup>3</sup>. Consequently, RG may have the potential to address some of the limitations associated with laparoscopic gastrectomy (LG).

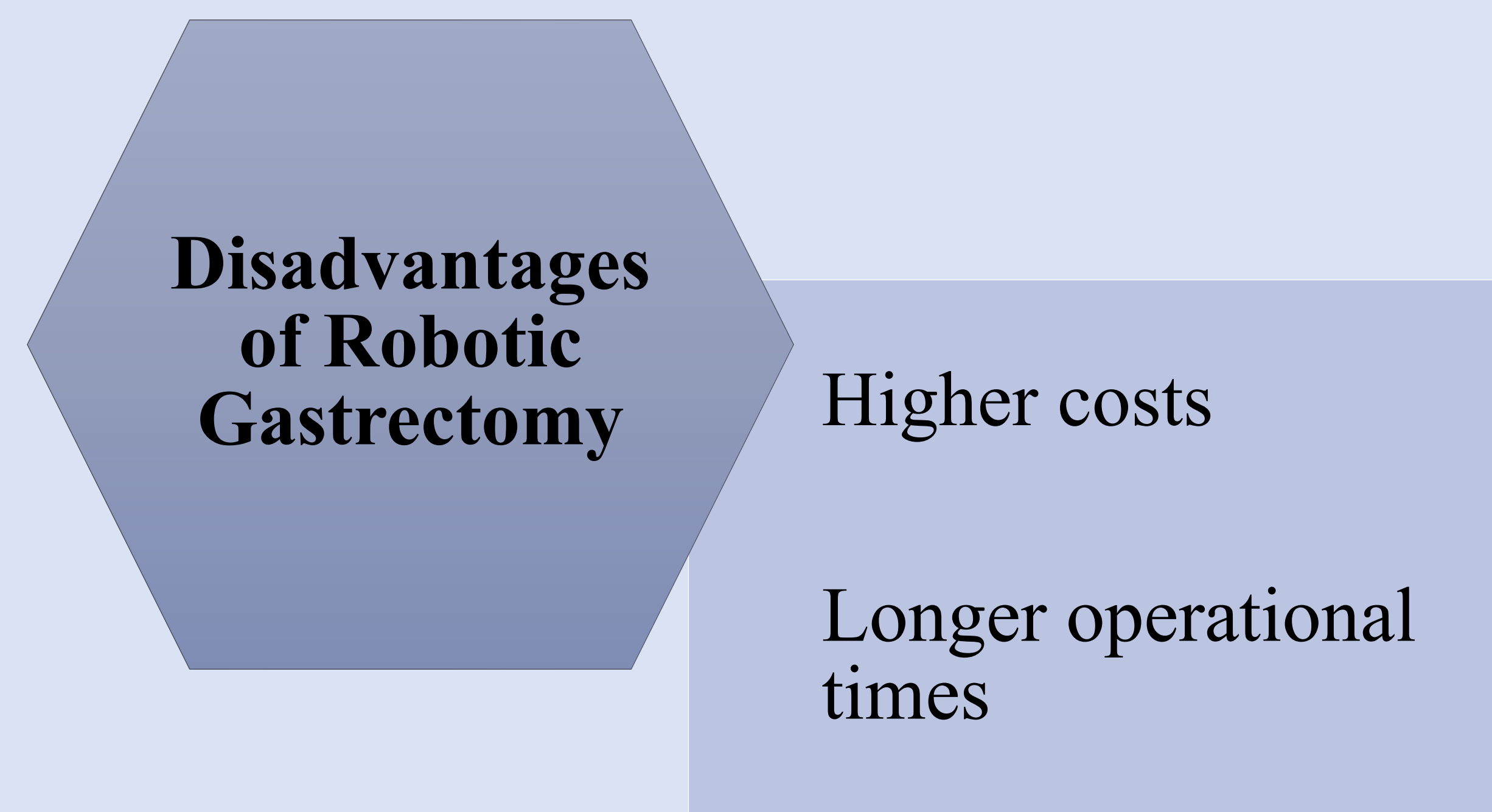
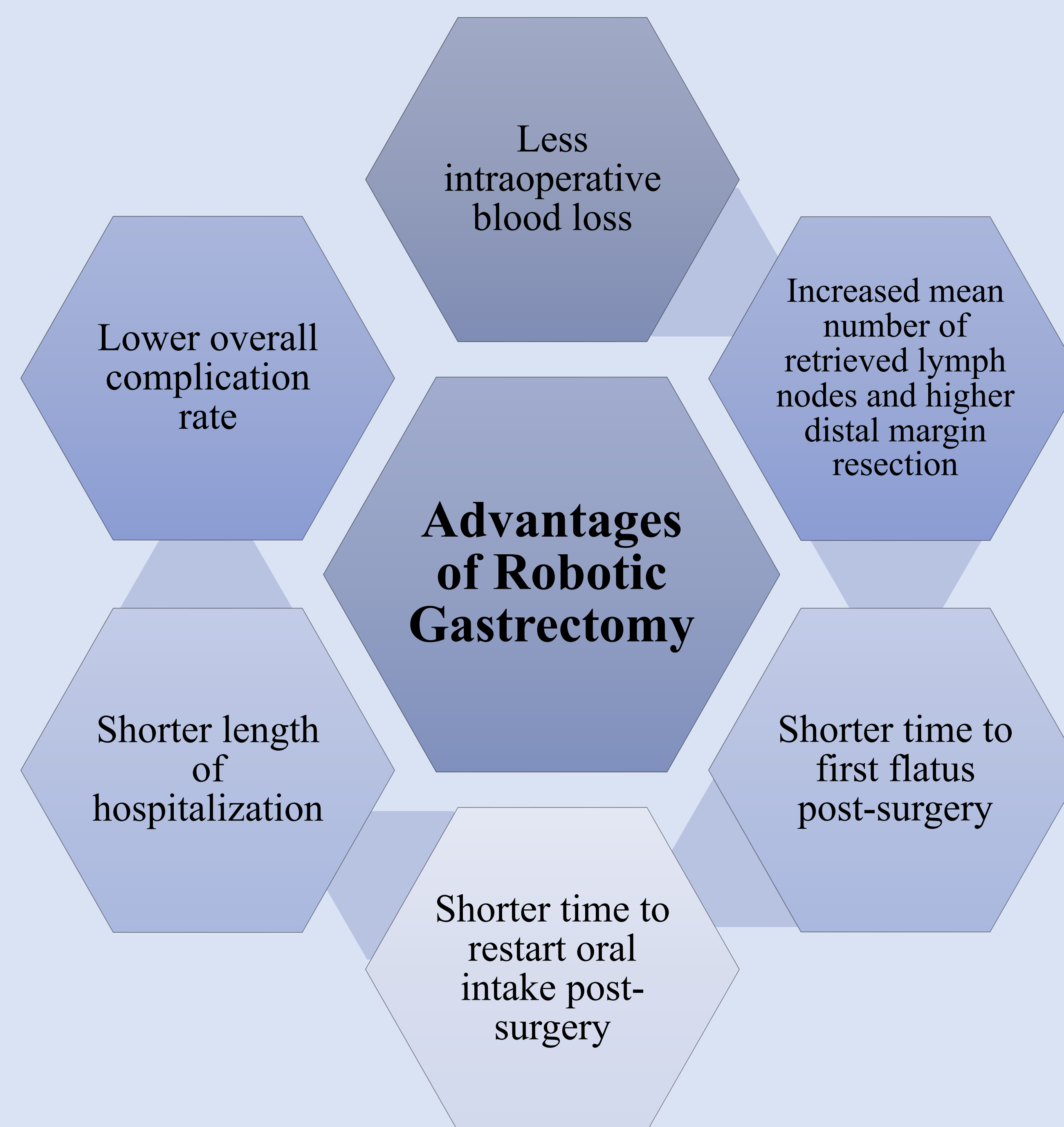
## Significance

Exploring the most effective surgical approach for gastrectomy is crucial for determining superior health outcomes in patients. This research aims to pinpoint the optimal method, offering valuable insights for improved postoperative well-being.

## Methods

Research Design	Literature review
Source of the articles:	Pubmed
Search String	Robotic gastrectomy and laparoscopic gastrectomy
Total number of articles:	524
Publication timespan	2018-2023
Included articles	13
Excluded articles	511
Reason for Exclusion	Irrelevance to the topic

## Results:



## Discussion:

The investigation into surgical approaches for gastrectomy, with a specific focus on the comparison between robotic gastrectomy (RG) and Laparoscopic gastrectomy, reveals a nuanced landscape of advantages and disadvantages. RG demonstrated a significant reduction in intraoperative blood loss, addressing a key concern in surgical procedures and enhancing patient safety. The increased mean number of retrieved lymph nodes and a higher distal margin of resection in RG underscore its potential for improved oncological outcomes, suggesting a more thorough tumor clearance compared to conventional approaches. Furthermore, the statistically shorter time to recovery milestones, such as the first flatus and oral intake resumption, in RG indicates a more rapid restoration of bowel function, a crucial factor in postoperative care. The observed shorter length of hospitalization in RG not only suggests quicker patient recovery but also highlights potential resource and cost-saving benefits associated with this approach. Importantly, the lower overall complication rate in RG adds to the growing evidence supporting its safety profile. However, it is essential to consider the disadvantages associated with RG. Higher costs and longer operational times pose challenges that must be carefully weighed against the observed benefits. The increased financial burden and extended operative durations raise important considerations for healthcare providers and policymakers when deciding on the adoption of RG.

## Conclusion:

The decision to choose RG should involve a balanced assessment of its advantages and disadvantages. Understanding the trade-offs between the enhanced outcomes, as discussed earlier, and the associated drawbacks is crucial for informed decision-making by clinicians, healthcare providers, and patients alike.

## Limitations/Future Directions:

- Unspecified gastric cancer stage and patient demographics in many studies
- Potential duplicate publication bias
- Findings are influenced by the surgeon's technical skill, impacting generalizability
- Future research should address these limitations for a more comprehensive understanding of the intervention's impact

## Reference:

