

BACKGROUND

- Robotic-assisted (RA) surgery is increasingly utilized in acute care surgery
- Advantages include enhanced visualization, dexterity, and surgeon ergonomics
- Concerns persist regarding higher costs without proven superiority in outcomes
- Limited data comparing **clinical outcomes and costs** of RAA vs laparoscopic appendectomy (LA) in ACS settings

OBJECTIVE

- Compare clinical outcomes and supply costs between laparoscopic appendectomy (LA) and robotic-assisted appendectomy (RAA)

QUESTIONS?

- Is RAA cost-effective?
- How do LA outcomes compare with RAA?

Disclosures: None | HIPPA compliant – no identifiable patient data

METHODS

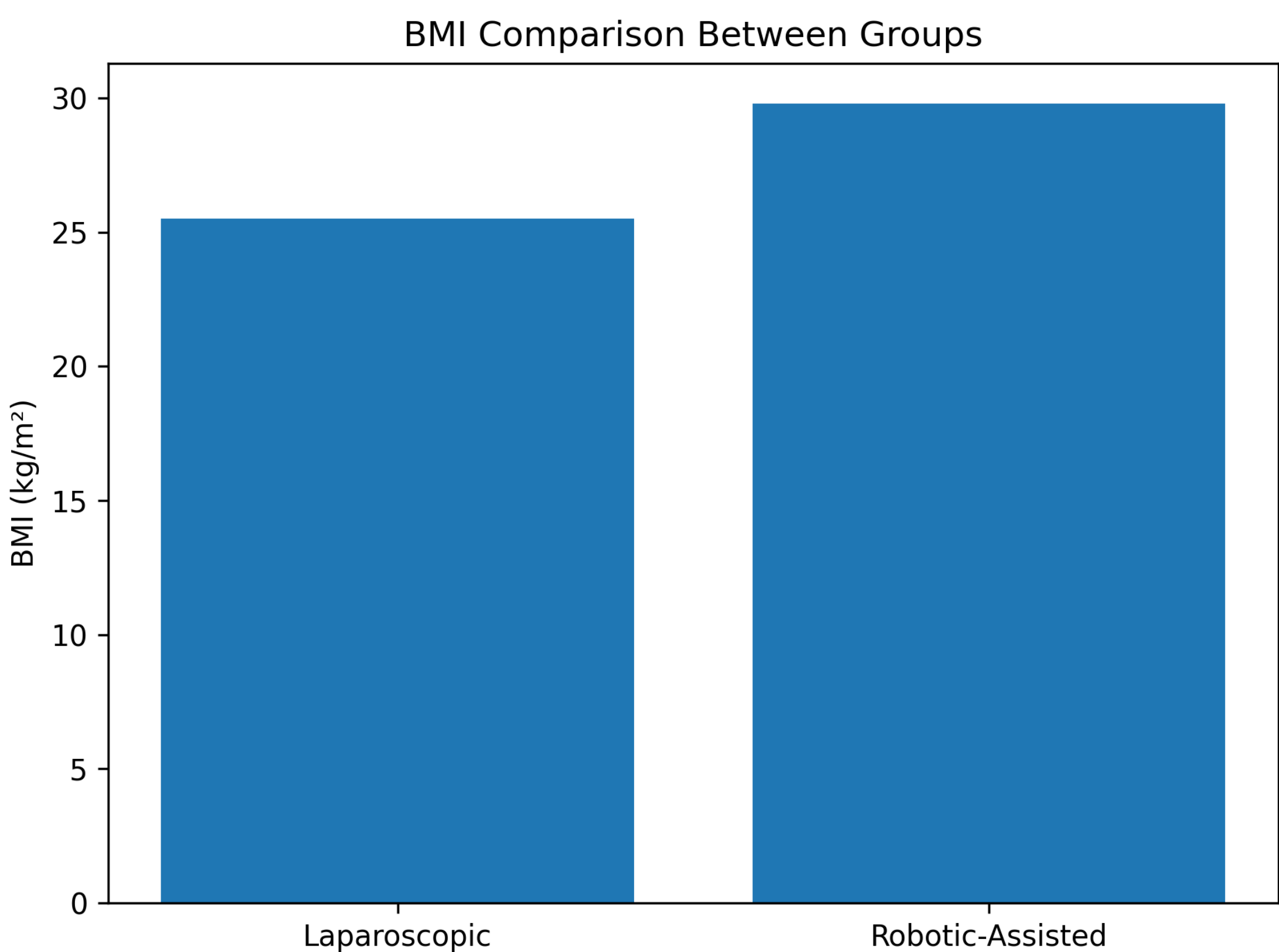
- Design: Retrospective cohort study
- Setting: High-volume community hospital, Florida
- Study Period: October 1, 2024 – April 1, 2025
- Population: adults >18yrs with acute appendicitis
- Data collected: Demographics, BMI, operative time, LOS, readmissions, and supply costs
- Analysis: LA vs RAA; statistical significance defined as $p<0.05$

RESULTS

- Total patients: 79
- Mean age: 50.9 years
- Female: ~60%
- Procedure distribution: RAA 59.5% | LA 40.5%

Baseline characteristics:

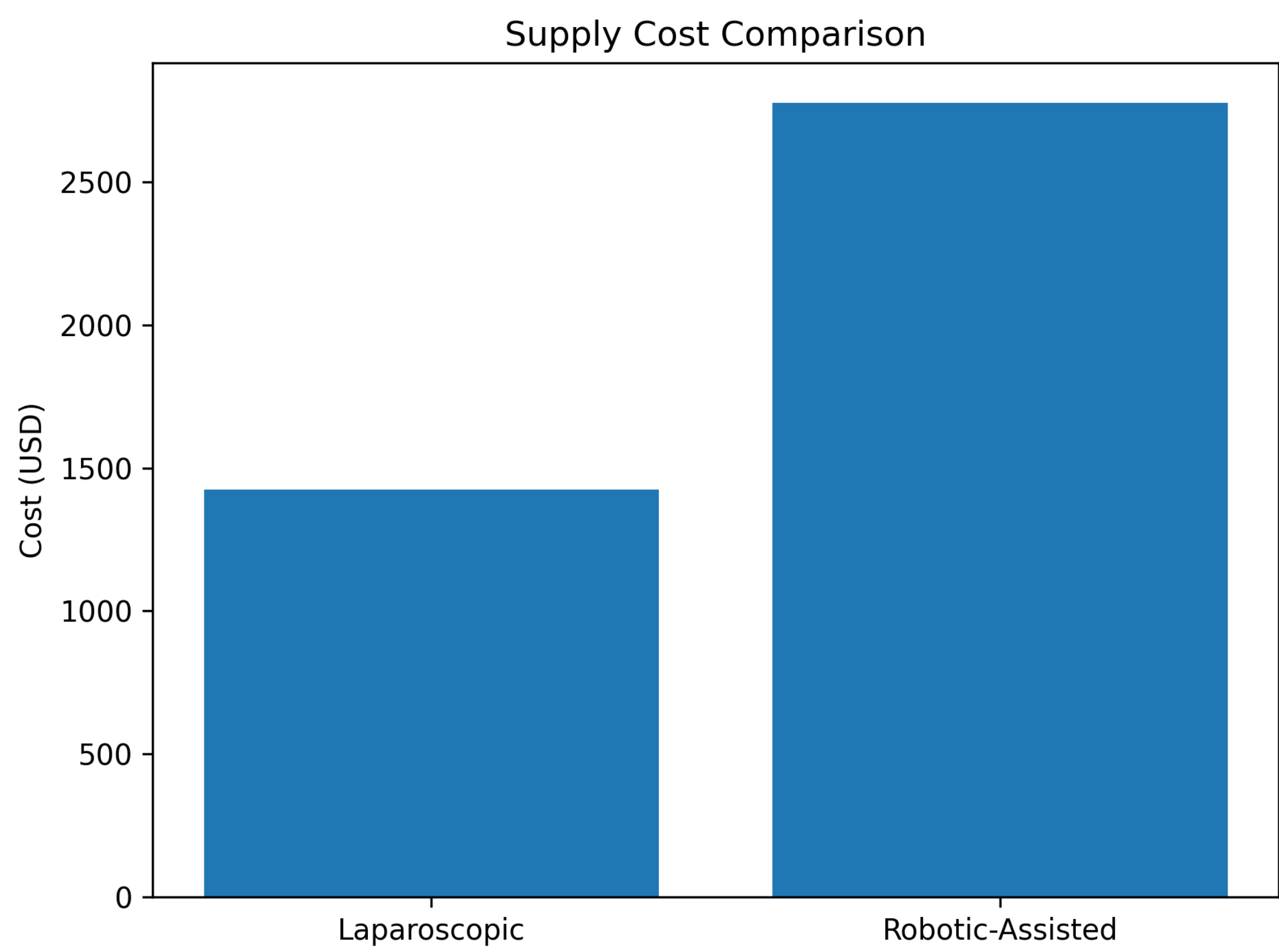
- BMI significantly higher in RAA group:
 - LA: 25.5 +/- 4.8kg/m²
 - RAA: 29.8 +/- 6.5kg/m²
 - $p = 0.006$



Operative & Clinical Outcomes

- No difference in LOS or readmission

Outcome	LA	RAA	p-value
Procedure time (min)	42.2 ± 10.4	46.3 ± 18.4	0.258
Room time (min)	80.3 ± 16.4	88.6 ± 22.5	0.061
Length of stay	Similar	Similar	NS
Readmission	Similar	Similar	NS



DISCUSSION

RAA provides **equivalent clinical outcomes** and operative efficiency compared with LA.

Increased costs remain the primary limitation of robotic utilization.

Higher BMI patients may derive greater benefit from robotic dexterity and visualization.

Cost-reduction strategies (e.g., lower-cost instruments) are essential for value-based adoption.

CONCLUSIONS

- RAA clinically equivalent to LA
- Higher supply cost with RAA
- Useful entry procedure for robotic platform adoption

RAA incurs higher supply costs without outcome superiority.

TAKE-HOME MESSAGE

Robotic appendectomy offers comparable outcomes to laparoscopy but at higher cost—selective use and cost-reduction strategies are key to maximizing value in acute care surgery.

