Risk Factors for Incisional Hernia Development After Pancreatic Surgeries: A Systematic Review and Meta-analysis

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Introduction

- The development of incisional hernias (IH) is an uncommon but complex outcome following pancreatic surgery, especially through the open approaches.
- We aimed to perform a systematic review and meta-analysis assessing the risk factors for development of IH following pancreatic surgery.

Methods

- PubMed, Cochrane, and EMBASE databases were searched from inception to September 2024 by two authors.
- Observational studies and randomized controlled trials assessing patients > 18 years old undergoing pancreatic surgery and reporting incidence and risk factors for IH were selected.
- Outcomes were mean age, mean body mass index (BMI), diabetes mellitus, female and male gender, active smoking, and surgical site infections (SSI). We used RStudio for statistical analysis.

686
Studies were retrieved from the primary search

07
Observational studies were included

MAIN FINDINGS

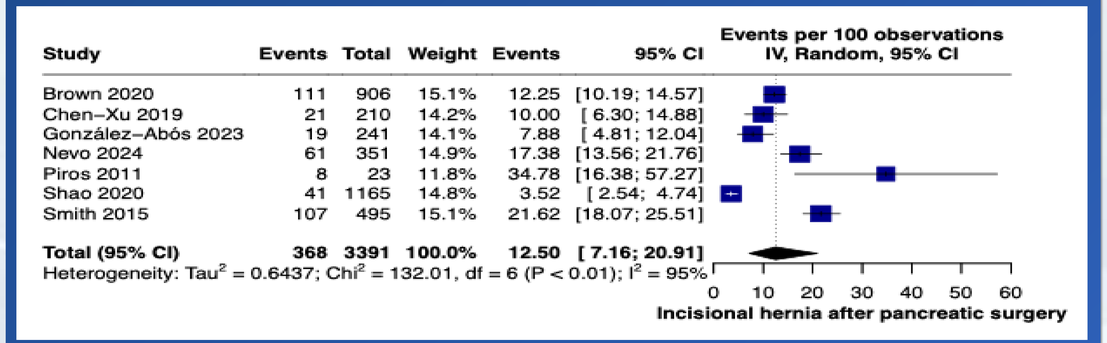


Fig. 1. Proportional meta-analysis of IH following pancreatic surgery

- ✓ **The incidence of IH in the pooled analysis 368 (10.8%).**
- ✓ **After performing a proportional meta-analysis, we found that 12.5 per 100 (95% CI 7.1, 20.9) patients undergoing pancreatic surgery develop IH.**
- ✓ **Our pooled analysis found that older patients (MD 2.7 years; 95% CI 0.5, 4.8; p=0.014) and patients with higher BMI (MD 1.8; 95% CI 0.9, 2.7; p<0.001) presented higher risk of developing IH.**
- ✓ **In our analysis, female and male gender, active smoking, diabetes mellitus, and SSI were not significant risk factors for IH after pancreatic surgery.**

Conclusion

- Our study showed that patients with older age and higher weight present higher risk of developing IH after pancreatic surgery.
- Considering pancreatic surgery is frequently carried out in emergent conditions, preoperative optimization to reduce weight before surgery is not always an alternative.
- On the other hand, surgeons must consider the possibility of optimizing the patient in terms of weight loss if feasible, with the aim of reducing morbidity after the procedure.

References

Dignity Health
St. Joseph's Hospital and Medical Center