Unmasking Spin in Comparative Studies of Groin Hernia Repair: An In-Depth Analysis of Statistical Revelance and Abstract Bias

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Introduction

- Since the publication of the latest guidelines on groin hernia repair in 2018, numerous comparative studies have examined various surgical techniques, materials, and anesthesia approaches. This review aims to assess the prevalence of spin in the abstracts of these studies, particularly focusing on those that did not demonstrate statistical significance.

Methods

- We conducted a comprehensive search of comparative studies published in JAMA Surgery, Hernia, Surgery, Surgical Endoscopy, Annals of Surgery, Journal of the American College of Surgeons, and JAWS from 2018 onwards analyzing inguinal hernia repair.
- We included randomized controlled trials (RCTs), observational studies, and meta-analyses. We included studies comparing surgical techniques, materials or anesthetic methods. Two reviewers assessed the abstracts for the presence of spin, assessing whether the abstracts exaggerated or misrepresented the significance of the results.

103 comparative studies without statistical significance

- 33 RCTs
- 28 Meta-analyses
- 42 Observational studies
- All cohort studies

146 comparative studies screened

MAIN FINDINGS

- ✓ **Overall, the frequency of spin ranged from 45.6% to 53.4% among the evaluators (p <0.001). The Cohen's Kappa statistics showed moderate agreement among the raters (Kappa = 0.46).**
- ✓ **Furthermore, the presence of spin varied significantly among study types. For meta-analyses, spin frequency ranged from 35.7% to 46.4%.**
- ✓ **In RCTs, the incidence of spin ranged from 39.4% to 45.5%, while in observational studies showed the highest prevalence, with spin observed in 57.1% to 64.3% of the abstracts. Inter-rater reliability test showed moderate agreement among the raters.**

Conclusion

- This review reveals a significant presence of spin in the abstracts of comparative studies analyzing inguinal hernia repair, despite the lack of statistical significance in the studies themselves. The observed spin may influence the interpretation of research results, highlighting the importance of critically evaluating reported conclusions against the actual data.

References

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