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Background:

- Rubber band ligation (RBL) and infrared coagulation (IRC) have been used as office-based procedures in hemorrhoidal disease (HD).
- Few studies have been published comparing the various types of instrumental therapy.
- The aim of this systematic review and meta-analysis was to compare the efficacy and safety of RBL and IRC.

Methods:

- We performed a comprehensive search in the databases of PubMed/MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials from inception through May 2022. We considered randomized controlled trials.
- Meta-analysis was performed by standard methodology using the random-effects model and heterogeneity was assessed using the I² statistics.
- The primary outcome was overall control of symptoms. The secondary outcomes were disease recurrence, post-procedural pain, and post-procedural bleeding.

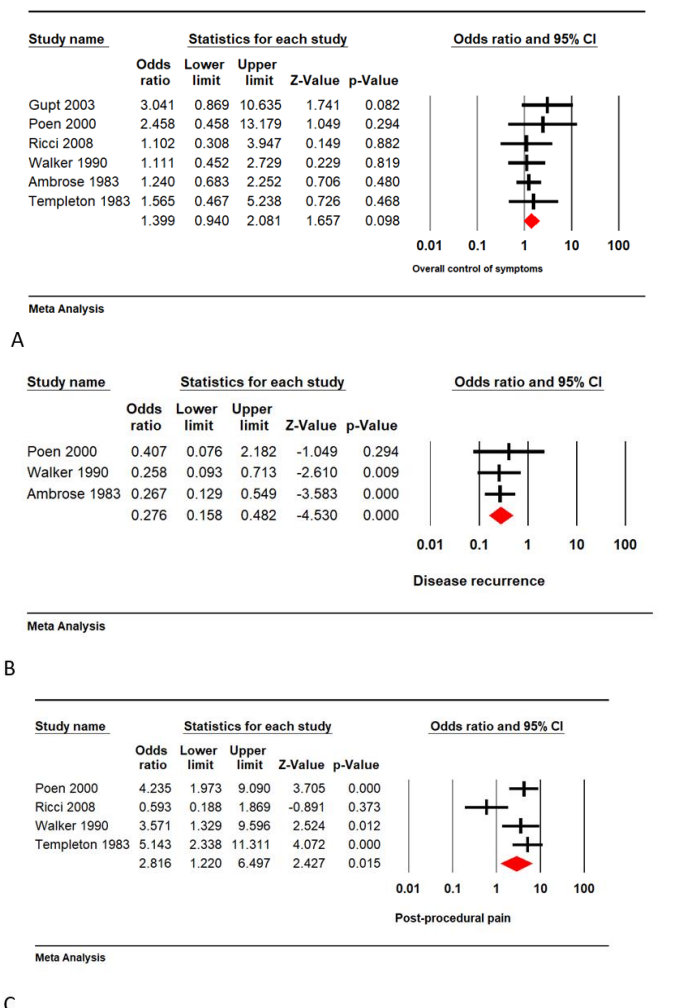


Figure 1: (A) forest plot showing the odd ratio of overall control of symptoms (B). Forest plot showing the odd ratio of disease recurrence. (C) Forest plot showing the odd ratio of post-procedural pain

Results:

- Six randomized controlled trials involving 359 patients treated with RBL and 381 patients treated with IRC were included in the meta-analysis.
- The overall control of symptoms was not statistically different between RBL and IRC (OR 1.39, 95% CI 0.94-2.08, $p=0.09$, $I^2=0\%$) (Figure 1A).
- However, disease recurrence was significantly less in RBL compared with IRC (OR 0.27, 95% CI 0.15-0.48, $p=0.00$, $I^2=0\%$) (Figure 1B). Post-procedural pain was significantly more in RBL compared with IRC (OR 2.8, 95% CI 1.2-6.4, $p=0.01$, $I^2=70\%$) (Figure 1C).
- No significant difference was observed in post-procedural bleeding between two groups (OR 0.5, 95% CI 0.16-1.7, $p=0.29$, $I^2=74.9\%$).

Conclusion:

- Our meta-analysis demonstrated that RBL is associated with less disease recurrence.
- There was no statistical difference in overall control of the symptoms or post-procedural bleeding.
- However, it was associated with more post-procedural pain.