

Endoscopic Vacuum Therapy (EVT) as Treatment for Colorectal Leak: A Meta Analysis

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Introduction

Endoscopic vacuum therapy (EVT) has recently emerged as a treatment modality for patients who experience anastomotic leak after surgery with an incidence of 6-30%.

Treatment of anastomotic leaks using EVT in the upper gastrointestinal tract has been well documented. EVT for colorectal leaks remains a somewhat less studied entity.

EVT is based on applying sponges to the area of the leak and negative pressure is applied to draw off fluid from the leak and help promote granulation tissue formation and healing.

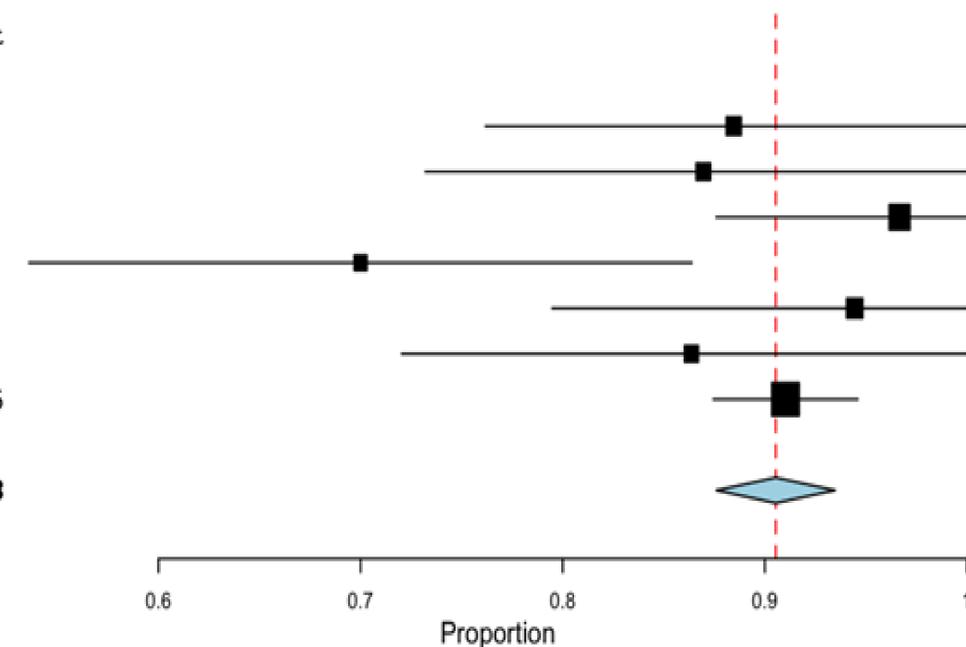
Results

Seven prospective studies involving 368 patients were included in our analysis, and indication for surgery was malignancy in all cases.

The total clinical success rate was 90.5% (CI: 87.6-93.5, $I^2 = 0\%$). The adverse event rate among all studies was 7% (95% CI: 4.4-9.5%, $I^2 = 0\%$)

6 patients required further surgical intervention and 2 required CT guided drain placement. No mortality with the procedure protocol was reported.

Studies	Estimate (95% C.I.)	Ev/Trt
Von Bernstorff 2009	0.885 (0.762, 1.000)	23/26
Riss 2010	0.870 (0.732, 1.000)	20/23
Milito 2017	0.967 (0.876, 1.000)	14/14
Borstlap 2017	0.700 (0.536, 0.864)	21/30
Rottoli 2018	0.944 (0.795, 1.000)	8/8
Jimenez-Rodriguez 2018	0.864 (0.720, 1.000)	19/22
Kuhn 2020	0.910 (0.874, 0.946)	223/245
Overall ($I^2=0\%$, $P=0.185$)	0.905 (0.876, 0.935)	328/368



Methods

- Pubmed, Embase and Cochrane were searched from inception to April 2022.
- Studies reporting success and adverse event rates for EVT used for colo-rectal anastomotic leaks.
- We included only prospective studies in our analysis. Using I^2 we assessed heterogeneity and calculated 95% confidence intervals using fixed or random effect models.

Conclusion

Our study demonstrates the safety and efficacy of EVT as an option for patients who experience colorectal anastomotic leak.

EVT is an emerging treatment option for anastomotic leak; however large prospective studies are warranted for further evaluation in this area.

References

- Von Bernstorff doi: 10.1007/s00384-009-0673-7.
- Riss 10.3748/wjg.v16.i36.4570
- Borstlap 10.1007/s00464-017-5679-6
- Rottoli 10.1007/s10151-018-1762-9
- Jimenez-Rodriguez 10.1177/1553350618771410