A meta-analysis of prophylactic endoscopic sclerotherapy for esophageal varices

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Authors' objectives
To determine if the literature provides evidence that prophylactic sclerotherapy increases survival in patients with oesophageal varices.

Searching
MEDLINE was searched from 1980 to 1992, and Index Medicus was searched manually from 1975 to 1992. The reference lists of all the identified studies and a number of recent reviews were examined for further articles. Unpublished literature was sought by contacting the investigators of all identified trials. No language restrictions were stated.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were included.

Specific interventions included in the review
Prophylactic sclerotherapy (ethanolamine, 1% sodium tetradecyl sulfate, polidocanol, 1% sodium tetradecyl sulfate plus 33% ethanol) versus placebo.

Participants included in the review
Patients with oesophageal varices were included.

Outcomes assessed in the review
Overall mortality and deaths due to variceal bleeding were assessed.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The quality of the trials was assessed using a modification of the protocol developed by Chalmers et al. (see Other Publications of Related Interest), and a score of between 0 to 100 was generated for each trial. The studies were masked, i.e. differential photocopying was used to remove details of the authors, journal, and results discussion from the articles. Each trial was then assessed and scored by 2 independent critical appraisers according to the modified protocol. The average of the scores was calculated for each trial.

Data extraction
Two independent observers extracted the data from masked copies of the studies onto prepared data forms, and resolved any disagreements by consensus. In cases where necessary data were not available from published reports, the authors were contacted and asked to complete a data sheet with the required data.

Methods of synthesis
How were the studies combined?
Data from the trials were combined by calculating a pooled estimate of the odds ratio (OR) and testing it for significance using the Mantel-Haenszel test. The 95% confidence interval (CI) for the pooled estimate of the OR was also calculated.
How were differences between studies investigated?

The homogeneity of the outcomes from the various trials was examined using a chi-squared test and a graphic display of the ORs.

The primary analysis focused on trials that were published in full in the English language. A sensitivity analysis was undertaken, grouping trials according to sclerosant used. Analysis was also carried out on RCTs reported only in abstract form or in languages other than English. A final analysis was carried out including trials that achieved a quality score of 50 or more.

A subgroup analysis was carried out to determine if the Child's classification had any influence on the effect of prophylactic sclerotherapy.

Results of the review

Twenty RCTs (n=1,737) were included; the follow-up ranged from 10 to 44 months. Fourteen articles were published in full in the English language, 4 were published as abstracts only, and 2 were published in full in a foreign language with an English abstract.

Overall mortality. Pooled estimate of OR of death in the 14 fully published English studies was 0.74 (95% CI: 0.60, 0.93, p=0.009), in favour of sclerotherapy; test of homogeneity, p=0.0003.

Pooled estimate of OR of death in all trials was 0.75 (95% CI: 0.61, 0.92, p=0.007); test of homogeneity, p=0.004.

The heterogeneity between trials disappeared when they were analysed according to sclerosant used.

Two fully published trials using sodium tetradecyl sulphate had a combined OR of 1.86 (95% CI: 1.15, 3.00, p=0.015); test of homogeneity, p=0.19.

Eleven fully published trials examined polidocanol, with a combined OR of 0.54 (95% CI: 0.42, 0.70, p=0.000006); test of homogeneity, p=0.056.

Subgroup analysis by Child's classification showed no benefit of prophylactic sclerotherapy for patients in Child's class A, i.e. those with well-compensated liver disease. However, in more-severely decompensated liver disease, prophylactic sclerotherapy with polidocanol appeared to be of similar benefit in patients of Child's class B and C.

Authors' conclusions

Prophylactic sclerotherapy with polidocanol appears to be effective, particularly in high-risk patients.

CRD commentary

This was a thorough systematic review. Good details of the primary studies were presented, although it is unclear why the MEDLINE search was only conducted from 1980.

Bibliographic details


PubMedID

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Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Endoscopy, Gastrointestinal; Esophageal and Gastric Varices /mortality /therapy; Gastrointestinal Hemorrhage /prevention & control; Hemostasis, Endoscopic; Humans; Odds Ratio; Polyethylene Glycols /therapeutic use; Publication Bias; Risk Factors; Sclerosing Solutions /therapeutic use; Sclerotherapy; Sodium Tetradecyl Sulfate /therapeutic use; Treatment Outcome

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.