Clinical use of evidence-based medicine: Rapid evidence resources

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Using octreotide to treat esophageal variceal bleeds:
The Cochrane Database of Systematic Reviews

Patient
A 45-year-old man with alcohol-induced cirrhosis was brought to the emergency department by emergency medical services for increased lethargy, melanotic stools, and hematemesis. He has a previous history of esophageal varices, which were banded 5 months ago.

Clinical Question
In patients with cirrhosis and portal hypertension that present with bleeding from esophageal varices, does octreotide decrease blood transfusions and mortality?

Search Strategy
Cochrane Database of Systematic Reviews (4th quarter 2005) using Ovid interface:
a. “octreotide or somatostatin”
b. 20 matches – 1 applicable
   1. Gotzsche PC. “Somatostatin analogues for acute bleeding oesophageal varices.” The last search for this review was February 2004.

Cochrane Database of Systematic Reviews
The Cochrane Database of Systematic Reviews is a database of high-quality systematic reviews. Systematic reviews use explicit methods to find and evaluate all of the available evidence to answer a specific clinical question.

Health care professionals who volunteer to work in the Collaborative Review Groups prepare the majority of the Cochrane reviews. Editorial teams oversee all aspects of the reviews’ preparation to ensure they are of the highest quality.

Reviewers perform a comprehensive search of English and non-English literature, as well as society meetings abstracts and communication with authors to find all published and unpublished studies on a specific clinical question. They then determine which studies to include in the review by comparing the studies to predetermined inclusion and exclusion criteria. The individual studies are then evaluated for methodological quality and their results are combined or pooled if appropriate to give an overall effect. Cochrane reviews give detailed descriptions of all components of the review including an overall summary and commentary on its clinical applicability and research implications.

The Cochrane Database of Systematic Reviews should be the first database searched when trying to answer a clinical question about therapy. The reviews are of excellent methodological quality, and the thorough searches insure that all available evidence is included. The uniformly high quality of the reviews means that the reader does not have to spend time evaluating the quality and can use the evidence quickly in clinical practice, in contrast to MEDLINE where individual studies as well as systematic reviews may not be methodologically sound. Unfortunately, the Cochrane Database of Systematic Reviews only has reviews about questions of therapy or prevention, so it is not able to answer all clinical questions.

Abstracts of Cochrane Reviews can be accessed without charge via their Web site at cochrane.org or through PUBMED. Full-text systematic reviews can be obtained through the paid search platform OVID or at Wiley publishers (www3.interscience.wiley.com). Access to the Wiley site costs $235 annually or $25 for 24-hour access to an individual review.
**Study Characteristics**
- Systematic review and meta-analysis of randomized controlled trials (last updated November 2004)
- Objective to determine whether somatostatin or analogues are effective in treating acute bleeding from esophageal varices
- Treatment with somatostatin, octreotide or vapreotide
  - Intravenous or subcutaneous
  - Varying doses and duration
- Primary outcomes included mortality and number of transfusions

**Validity of Evidence**
Because of the high quality of Cochrane Reviews it is not necessary to evaluate the validity of the review.

**Results**
- Twenty randomized controlled trials met inclusion criteria
- Number of patients: 2581
- Divided into high-quality and low-quality trials
- Mortality: 7 high-quality studies
  - No statistical difference between somatostatin/analgoue and placebo RR 0.96 95% CI (0.74-1.24)
  - No heterogeneity
- Number of blood transfusions: 8 high-quality studies
  - Decreased transfusions in somatostatin/analgoue compared to placebo
  - 0.74 units of packed red blood cells saved (95% CI:0.3-1.2)
  - Heterogeneity between studies

**Applying the Evidence to the Patient**
- Our patient had bleeding varices and fits the inclusion criteria in the studies included in the meta-analysis.
- This bleed represents the patient’s second variceal bleed
  - Somatostatin or its analogues are a feasible treatment. In the United States octreotide is used and readily available.
  - It is not stated if patients in the trials had a sentinel event or a rebleed.

**Summary**
The Cochrane Database of Systematic Reviews is a database of high-quality systematic reviews. The systematic review by Gotzsche was found in 2 minutes and assessed in 5 minutes. This can easily be done while seeing a patient in the office or hospital. In this well done systematic review by Gotzsche, high-quality studies did not show a significant improvement in mortality with the use of somatostatin. There was a small statistically significant decrease in blood transfusions in the somatostatin group, but this difference may not be clinically significant as on average less than 1 unit of blood was saved per patient.

**Bottom Line**
There is no evidence that somatostatin or its analogues improve survival in acute esophageal variceal bleed and it only minimally decreases blood transfusion requirements. The minimal decrease in transfusions is not worth the cost of the medication and other potential side effect, so the patient should not be treated with somatostatin.

**References**
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