Nik Collins


Aim: To perform a literature review regarding the management of oesophageal soft food bolus obstruction.

Design: Systematic Review

Databases Reviewed: Cochrane Library, National Center for Biotechnology Information, US National Library of Medicine

Search Strategy: Provided

Method of Paper Selection: Not Described

Method of Critiquing the Included Articles: Not Described

Topics Reviewed: hyoscine butylbormide, gas forming agents, glucagon, benzodiazepines, opioids, surgery

Glucagon Papers Included: Tibbling (RCT); Sodeman (Retrospective Review); Al-Haddad (Retrospective Review)

Key Conclusions for Glucagon: Administration of glucagon is no more effective in relieving oesophageal foreign body than when no medication is given.

Major Weaknesses of the Review:

The method of selecting the papers for inclusion/exclusion is not provided. Only three papers describing the use of glucagon for esophageal obstruction are included here; maybe excluded those describing combo therapies?
The method of critiquing the included articles is not described; this could lead to subjective bias.

**Question:** What would you say are the major weaknesses of this systematic review with regard to the methodology? (No method of paper inclusion, no method of critiquing the papers)
Brent Fowler:


**Aim:** Assess the effect of glucagon in the setting of acute food bolus obstruction

**Design:** Case-control

**Method:**

Retrospective review of all ED patients (1975-2000) with food bolus obstruction.

Patients categorized as glucagon recipients (n=106) or nonrecipients (n=116); glucagon responders (n = 10) or nonresponders (n=96); spontaneous resolvers (n=20) or nonresolvers (n=96);

Characteristics compared using chi-square (categorical variables – response/no response; male/female, etc.) or t-test (continuous variables – age, BMI, duration of symptoms)

**Key Findings:**

Response to glucagon in 19 (9.4%) of those who received it.

Meat was less likely to be the obstructing food in glucagon responders (70% responders vs. 90% non-responders, p = 0.03).

Esophageal ring/strictures were less likely to be seen in responders (0% responders vs. 31% non-responders, p = 0.05).

Twenty control patients (non-recipients) spontaneously resolved (17.2%).

Patients with a shorter duration of symptoms were more likely to resolve spontaneously (3.3 hours responders vs. 12.4 hours non-responders, p = 0.07).

Spontaneous resolvers less likely to have esophageal ring/stricture (0% vs. 21%, p = ns)

**Limitations:**

Retrospective – methodology not well described

Some patients received multiple doses
Selection bias – most likely that glucagon was given to patients where there was no sign of spontaneous resolution

Stats pretty weak, regression stronger method of determining predictors of response/no response and characteristics of those who did and did not receive glucagon.

**Key Conclusions for Glucagon:**

Does not support the routine use of glucagon in this setting and patient population.

**Question:**

Understanding the limitations inherent to the retrospective methodology, if you were going to conduct a retrospective review of patients with esophageal food bolus, what are some methods that you might use to ensure rigor in the method?

- Standardize abstraction forms
- Define method of case selection
- Define variables and where to look for them
- Abstractor training and monitoring
- Resolution of conflicting data
- Blinding of abstractors to study hypothesis
- Assessment of interrater reliability

**Two papers:**

- Ann Emerg Med, Gilbert et al. Chart Reviews in Emergency Medicine Research: Where are the Methods?
- Acad Emerg Med. Worcester & Haines, Understanding Medical Record Review Studies
Jordan Maresh:

**Aim:** To evaluate our experience with glucagon used in the ED to relieve esophageal food impaction.

**Design:** Case series (n = 92 episodes in 85 patients); retrospective review

**Method:**

Retrospective review of all ED patients (1998-2003) with food bolus obstruction who received glucagon.

Continuous variables: means & ranges; categorical variables: percentages & modes; logistic regression for association between relief and patient characteristics; fisher’s exact test used to evaluate if there was a difference glucagon vs. glucagon & benzo.

**Key Findings:**

33% (30/92) episodes were relieved with glucagon

Mean time to relief = 38 min.

63 episodes (68%) went to endoscopy; food was still impacted in 73% of these cases.

Distal esophageal narrowing present in 79% of cases.

With logistic regression, only a history of previous solid food dysphagia was associated with post-glucagon resolution (p < 0.05).

19 patients received benzo + glucagon, 11 (58%) had relief compared to 26% (19/73) of cases receiving glucagon alone (p < 0.01).

**Limitations:**

Retrospective – methodology not well described

Some patients received multiple doses

Some patients received other meds (benzos, narcotics)

Selection bias – most likely that glucagon was given to patients where there was no sign of spontaneous resolution
Adverse effects?

No comparison to those who did not receive glucagon

Key Conclusions for Glucagon:

Does not support the routine use of glucagon in this setting and patient population.

Question:

What do you think that this paper adds to what we have already reviewed tonight?

Finding on benzo + glucagon vs. glucagon alone

Finding regarding history of solid food dysphagia, but not other patient characteristics being predictive of relief with glucagon.

What do you see as the most important weakness of this study?
J. M. Maresh:  

**Aim:** Conduct a multicenter, placebo-controlled, double-blind study of glucagon and diazepam in the treatment of ED esophageal foreign body.

**Design:** multicenter, placebo-controlled, randomized, double-blind study (n = 24 glucagon/diazepam, n = 19 placebo)

**Method:**

>15, radiographically confirmed esophageal foreign body

Enrolled, randomized

Glucagon/Diazepam group: glucagon 1 mg iv & diazepam 2.5-10 mg per age & weight

Placebo group: placebo glucagon/diazepam iv

Monitored x 1 hour; if did not pass, patients were prepared for endoscopy

t-test to compare groups

**Key Findings:**

3 patients in glucagon/diazepam and 1 in placebo achieved relief of symptoms in 1 hour

Endo in 28 patients; 26 had FB removed

History of dysphagia in 33/43 patients

Stricture in 9, hiatal hernia in 1

80% meat

**Limitations:**

Excluded those with known esophageal pathology, probably resulting in a population more likely to spontaneously pass a FB

No power analysis or sample size calculation, adequate power

**Key Conclusions for Glucagon:**

No significant difference in glucagon/diazepam vs. placebo; not recommended.
Questions:

Assuming that the remaining available literature is consistent in findings with what we have reviewed today and is consistent in strengths and weaknesses with what we have reviewed today,

What do you think you will do to treat the next patient to see with an esophageal food bolus?

If you GI consultant asks you to give glucagon anyway, what are the risks and issues you will consider?

Given what we have read, do you think there is any benefit to conducting a large, well-powered, randomized, placebo-controlled trial of glucagon’s efficacy? Do you think there is an ethical issue with randomizing patients to the placebo arm or is there a state of clinical equipoise?

For All: