Maine Medical Center
Department of Emergency Medicine

Journal Club / Research Article Summary - (Adapted from Schultz Table)

Date: July 2013
Presenter: Brent Fowler

ARTICLE:
  ● Citation: Sodeman et al. GI out of Assessment of the Predictors of Response to Glucagon in the Setting of Acute Esophageal Food Bolus Impaction. Dysphagia 19:18–21 (2004)
  ● Country: Mayo Clinic in Rochester MN, USA
  ● Funding Sources: unstated

PURPOSE:
  ● Research Question(s): What factors of an impaction predict response to glucagon for resolution.
  ● Hypothesis: None stated.

DESIGN:
  ● Study Design: Case control (retrospective chart review)

SETTING / SUBJECTS:
  ● Research Setting: Mayo Clinic ED from 1975-2000

  ● Subjects:
    ○ Study population: all patients who presented with acute food impactions
    ○ Number (control / intervention groups): 222 total cases, 106 received glucagon.
    ○ Demographics: no significant difference in demographics between groups except that glucagon group was significantly older (65 years old vs 53 in control group).

METHODS:
  ● Interventions: Patients in experimental group were given glucagon, patients in control were not.

  Study Groups: 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);

DATA ANALYSIS:
  ● Level of Data: X Categorical  X Ordinal
• *Statistics Used:* Characteristics compared using chi-square (categorical variables – response/no response; male/female, etc.) or t-test (continuous variables – age, BMI, duration of symptoms)

**RESULTS:**

• *Brief answers to research questions:*
  
  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.

**IMPLICATIONS FOR PRACTICE:**

*Applicable to this clinical practice:* Does not support the routine use of glucagon in this setting and patient population.

*Feasibility (cost, resources, etc):* expensive and does not appear to be effective.

**LEVEL OF EVIDENCE / DECISION FOR USE:**

• Consider Replication

• *Level of Evidence:*
  
  Ila  Evidence obtained from at least one well-designed controlled study without randomization