Predictors of Non-Response to Topical Steroids Treatment in Esophagitis

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Purpose: Topical steroids are used as first-line treatment agents for esophagitis (EoE). Randomized controlled studies have demonstrated only modest efficacy of these agents for inducing histologic remission. The aim of this study was to examine whether there were any characteristics that could predict non-response to treatment with topical steroids.

Methods: Using data from two prospective studies and an EoE registry, children (<18 years) and adults with EoE, as defined by consensus guidelines, were included in the analysis. All patients were treated with an 8-week course of either swallowed fluticasone or viscous budesonide. Responders were defined as achieving ≥5 eos/hpf in both the mid-proximal and distal esophageal biopsies and non-responders as having >5 eos/hpf in proximal and/or distal esophagus. Demographic, clinical, endoscopic, and histologic features were examined.

Results: The study cohort included 75 EoE patients: median age was 33 years (range 2-64 years), 71% adults, 84% male, and 76% Caucasian. Children had a higher response rate to topical steroids compared to adults (60% vs. 33%, p=0.047). Response rate was similar between males and females (33% vs. 58%, p=0.101) and between the two types of steroids (38% fluticasone vs. 36% budesonide, p=0.823). With regards to clinical symptoms, responders were more likely to present with food impaction vs. non-responders (43% vs. 21%, p=0.047), however dysphagia (86% vs. 85%, p=0.943) and heartburn (29% vs. 21%, p=0.474) were similar between responders and non-responders. With regards to pretreatment endoscopy, responders were less likely to have furrows compared to non-responders (64% vs 87%, p=0.019). Other endoscopic features were similar between responders and non-responders, rings (54% vs 62%, p=0.499) and white plaques (21% vs. 36%, p=0.181). Non-responders were more likely to undergo dilation compared to responders (43% vs. 18%, p=0.028). Peak proximal (49±50 vs 55±48, p=0.406) and distal eosinophil (71±81 vs 82±86, p=0.578) counts were similar between responders and non-responders. In multivariate logistic regression, the independent predictors of non-response to topical steroids were adult age (OR 5.13 p=0.048), without heartburn (OR 0.116 p=0.005), furrows (OR 8.24 p=0.006) and dilation (OR 6.30 p=0.023).

Conclusion: Non-responders to topical steroids are more likely to be adults, with longitudinal furrows on endoscopy, who undergo dilation and are less likely to present with food impactions. Consideration should be given to either increasing dosage of steroids or using an alternate form of treatment, such as using an alternate form of treatment, such as increasing dosage of steroids or using an alternate form of treatment, such as food impaction (OR 0.116 p=0.005), furrows (OR 8.24 p=0.006) and dilation (OR 6.30 p=0.023).

Body Mass Index (BMI) and Percent Fat Are Not Associated with Increased Reflux in a Veteran Hospital Review

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Purpose: There is a known association between obesity and GERD. Whether percent fat determined by bioimpedance correlates better with reflux measures when compared to BMI is not known. There is little data regarding obesity measures and their relationship to reflux as measured by impedance-pH monitoring in US veterans.

Methods: All consecutive patients undergoing 24-hour impedance-pH reflux monitoring in 2011 for whom BMI and bioimpedance measurements were available were included. Percent fat was determined by a dedicated bioimpedance scale and fat range categories assigned per NY Obesity Research Center standardized ranges based on age and sex. Reflux was measured during 24-hour impedance-pH monitoring performed either on or off acid suppression. We evaluated the association between BMI and percent with the following variables a) number of reflux events (total, acid, nonacid) b) proximal reflux events (extending to 15 cm above the LES or higher). Association was evaluated by Pearson correlation.

Results: 40 patients were included % male, mean age 54 years, BMI range: 16-40, mean BMI: 28.4, 44% with EoE. Correlations between BMI and percent fat, and reflux are shown in the table. There were no significant correlations between BMI or fat percent and total number of reflux events (r=0.386, p=0.20 and r=0.406, p=0.442).

Conclusion: BMI or percent fat did not correlate with reflux events in a sample of veteran patients. Our data failed to show a correlation between BMI or percent fat measured by bioimpedance and number of reflux events (total, acid, nonacid) or proximal extent of reflux in a sample of veteran patients. While this could be due to a sample biased toward the overweight and obese, other factors are possible. Recruitment is ongoing.

Metformin Use and the Risk of Esophageal Adenocarcinoma in Patients with Barrett's Esophagus

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Purpose: The goal of this study is to determine whether the use of Metformin modifies the risk of development of esophageal adenocarcinoma in patients with Barrett's esophagus.

Methods: Data was collected retrospectively using electronic medical records at Dayton Veterans Affairs Medical Center. Patients with a diagnosis of Barrett's esophagus and esophageal cancer were identified between the period 1992 and 2012. Following data was collected from the patient's charts: age, race, gender, BMI (Body Mass Index), diabetes or not, medication list (Metformin, Statin, Aspirin, Proton pump inhibitor (PPI), alcohol use, tobacco inhalation and histology. The outcome variable was high grade dysplasia or esophageal adenocarcinoma. Univariate analysis was done using two sample t-test for age and BMI, and Chi square test or fisher’s exact test for obesity, DM, Metformin, Statin, Aspirin, PPI, smoking and alcohol. Multiple logistic regression analysis was then done using the significant variables to predict independent risk factors.

Results: Retrospective chart review for the last 20 years revealed 625 patients with the diagnosis of Barrett’s esophagus or esophageal cancer. Of these 42 were excluded because their diagnosis was squamous cell carcinoma of esophagus. Of the 583 patients, 115 had esophageal adenocarcinomas and 468 had Barrett’s esophagus without high grade dysplasia or cancer. The variables significantly associated with outcome variables were: age, BMI, smoking, alcohol, statin use and PPI use. Patients with esophageal adenocarcinomas were older (p=0.001) and had lower BMI (p=0.001). A higher percent of patients with esophageal adenocarcinomas were smokers (p=0.003) and used alcohol (p=0.029). A lower percent of patients with esophageal adenocarcinoma used statins (p=0.001) and PPI (p=0.001). A multi-variable analysis was done using multiple logistic regression. Age, smoking and diabetes were significant risk factors for development of esophageal cancer with the following results: age p=0.001 odds ratio 1.05 (95% CI 1.02-1.07), smoking p = 0.003 odds ratio 2.33 (95% CI 1.33-4.09), diabetes p=0.007 odds ratio 2.06 (95% CI 1.22-3.47). Statin use was protective against the development of cancer with p=0.001 odds ratio 0.43 (95% CI 0.26-0.72).

Conclusion: The three independent variables that predicted progression of Barrett’s esophagus to esophageal adenocarcinomas in our study were older age, smoking and diabetes. Statin use showed protective effect against development of esophageal adenocarcinoma. Metformin use did show a protective effect but it was not statistically significant. This study does not provide support for a beneficial association between usage of Metformin and esophageal cancer.