a screening test for BE/EAC after reading the educational section of the survey. 64 (66%) were aware of sEGD (22% had undergone sEGD), while only 18 (16%) and 15 (13%) were aware of uTNE and CE (5.5% had undergone uTNE and 1% had undergone CE before). 72 (67%) preferred unsedated techniques (CE: 56% or uTNE: 11%) while the rest (33%) preferred sEGD. 18 (16%) had been diagnosed with cancer before (5 breast, 3 prostate, 2 colon, 6 skin, 6 others). 99 (87%) had undergone colonoscopy, 51 (86%) mammography and 45 (82%) prostate cancer screening. 99 (87%) were interested in being invited to undergo screening using one of the three techniques described in the survey.

Conclusion: Though only a minority of residents in south eastern Minnesota were initially aware of BE, following education about BE, a majority of subjects expressed willingness to undergo screening. Respondents appear to be more willing to undergo screening by unsedated techniques with Esophageal capsule endoscopy being the most acceptable technique. Responders appear to be willing to undergo non-invasive screening tests for BE. Predictors of participation in screening need to be identified.

This research was supported by an industry grant from Investigator initiated research grant.

### Table 1.

<table>
<thead>
<tr>
<th>Manometric Diagnosis Pre</th>
<th>Manometric Diagnosis Post</th>
</tr>
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<tbody>
<tr>
<td>Normal</td>
<td>IEM</td>
</tr>
<tr>
<td>Normal</td>
<td>93</td>
</tr>
<tr>
<td>IEM</td>
<td>14</td>
</tr>
<tr>
<td>DES</td>
<td>10</td>
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<tr>
<td>Nutcracker</td>
<td>2</td>
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</table>

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GERD Induced Sleep Disorders and a Reversible Driving Impairment with Esomeprazole - A Prospective Pilot Study

2010 ACG Governors Award Recipient for Excellence in Clinical Research David Johnson, MD,1 Louise Holmes, RN,1 Jennifer May, PhD,2 Catesby Ware, PhD.1 1. Eastern Va Medical School, Norfolk, VA; 2. Digestive and Liver Disease Specialists, Norfolk, VA.

Purpose: Sleep dysfunction (e.g. sleep apnea) has been correlated with impaired psychomotor function including worsening driving simulator (DS) performance. Extreme lane variability increases the risk of simulator crash events. GERD impairs sleep quality and next day function as measured by quality of life and work productivity assessments. The aim of this study was to evaluate the potential for GERD induced sleep dysfunction on simulated driving and to assess the treatment effect of esomeprazole (ESO).

Methods: This prospective pilot-proof of concept study evaluated 11 healthy pts with well established GERD with nocturnal symptoms snf w/o known sleep disorder (9 women 2 males; age mean 49, sd 8.6 yrs/range 32-60). All were studied at baseline off protein pump inhibitor (PPI) therapy for at least 14 days and then again after 4 weeks of taking ESO 40mg q am. Testing was done in a validated commercial driving simulator STISIM Drive (Systems Technology, Inc) that responds to driver inputs (steering, throttle, brake) and generates realistic roadway images. Driving performance (standard deviation of lane variation-SDLP) over 60mins was measured every 0.5 second for the duration of the task. Subjects first completed a 10-minute practice drive that is similar to a city drive with stoplights, turns, pedestrians, and traffic, to help adaptation to the vehicle dynamics. Results were compared to 15 normal <60 yrs, 15 elderly normal (mean 78 yrs), and 15 sleep apnea patients.

Results: Primary measure of SDLP was compared across six consecutive 10-minute driving periods while subjects were on and off drug using repeated measures ANOVA. SDLP increased over time (p=0.002); (Figure 1) and improved with ESO (p=0.004). On ESO: overall average % nights with SD were reduced (62.5% vs. 9.5%; p<0.001), Epworth Sleepiness Scale (ESS) decreased improved with ESO (p=0.004); (Figure 1) and standard deviation of lane variation-SDLP) over 60mins was measured every 0.5 second for the duration of the task. Subjects first completed a 10-minute practice drive that is similar to a city drive with stoplights, turns, pedestrians, and traffic, to help adaptation to the vehicle dynamics. Results were compared to 15 normal <60 yrs, 15 elderly normal (mean 78 yrs), and 15 sleep apnea patients.

Conclusion: GERD-induced SD has a previously unrecognized and significantly adverse effect on simulated driving performance, which improved with ESO treatment. The improved ESS score suggests that reduced sleepiness contributed to improved performance. Appropriate treatment for patients with GERD and nocturnal symptoms may have potentially new and life saving implications. Further prospective blinded controlled trials are warranted to validate these findings.


### Lung Transplantation Alters Esophageal Motility and is Associated with Abnormal pH Testing

John Castor, MD, Richard Wood, MD, Donna Niedzwiecki, PhD, Andrew Mair, MD, MHS, Scott Palmer, MD, MHS, Rahul Shimp, MD. Duke University, Durham, NC.

Purpose: Accumulating evidence suggests that the aspiration of gastric contents is a causative or additive factor leading to chronic allograft dysfunction in lung transplant recipients. Esophageal dysmotility, particularly ineffective esophageal motility (IEM), has been associated with delayed acid clearance. The coexistence of IEM with gastroesophageal reflux (GER) may place transplant patients at higher risk for aspiration. There are limited published data describing the affect of lung transplantation on esophageal motility. Our aim was to characterize esophageal motility both before and after lung transplantation. We further sought to determine if abnormal post transplant motility was associated with abnormal pH testing.

Methods: A retrospective chart review was performed of all adult patients who underwent lung transplantation at Duke University Medical Center from 1/1/1992 to 10/14/2009. Patients with both pre and post transplant esophageal manometry and 24-hour pH study results available were included in our analysis. Descriptive studies were used for demographic data. McNemar’s test was used for paired categorical variables.

Results: 245 patients (median age 57 yrs, range 18-77; 57% female) were included. The relationship of pre-transplant manometric diagnosis to post-transplant diagnosis is included (Table 1). Results of pH testing revealed 135 (55%) abnormal pre-transplant studies and 169 (69%) abnormal post-transplant studies (p=0.0004). There was a significant difference between the pre and post transplant diagnosis of IEM (Table 2). Further, 57 of 73 (78%) patients with IEM post transplant had an abnormal pH study, as compared to an abnormal pH study in 112 of 172 (65%) patients without IEM (p<0.0001).

Conclusion: This study suggests that lung transplantation alters esophageal motility. In particular, IEM was significantly more prevalent after transplant and associated with abnormal pH testing. Further studies to determine if abnormal post-transplant motility is related to chronic rejection may provide insights into the pathogenesis of GER related rejection.