

ARE THERE RISK FACTORS FOR DEVELOPING BARRETT'S ESOPHAGUS IN PATIENTS WITH GASTROPARESIS?

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Background

Up to 25% of patients with chronic gastroesophageal reflux disease (GERD) are found to have concomitant gastroparesis. Gastroparesis has been implicated in causing GERD through a few mechanisms. One way is due to impaired gastric emptying causing prolonged retention of stomach contents, stimulating gastric acid secretion. Increased pressure from retained contents causes stomach fluid volume to rise, thereby increasing the chance for reflux. Given the potential for chronic reflux, patients with gastroparesis may be more likely to develop Barrett's esophagus, a potentially serious complication. Our study will investigate potential risk factors in patients with gastroparesis for developing Barrett's esophagus as well as the effect of Barrett's on inpatient mortality among hospitalized patients with gastroparesis.

Method

This is a retrospective study utilizing the 2012 to 2014 National Inpatient Sample Database. Hospitalized patients with ICD-9 codes for gastroparesis were selected, and these patients were divided into two groups: without Barrett's esophagus and Barrett's esophagus. Variables such as age, sex, race, Elixhauser Comorbidity Index (ECI), comorbid diabetes were analyzed between the two groups. Inpatient mortality, and hospital length of stay (LOS) were secondary outcomes that were assessed.

Results

A total of 190,746 patients with a diagnosis of gastroparesis were identified, of which 2,136 had a diagnosis of Barrett's esophagus. There was no significant difference in comorbidity, LOS or mortality between the two groups. However, among patients with gastroparesis that did have Barrett's esophagus, mean age was higher (56.9 years vs. 51.5 years), white patients were more likely to develop Barrett's. While more females developed Barrett's overall, there was a higher proportion of males that had Barrett's compared to those without. There was no difference in prevalence of diabetes without complications. However, patients without Barrett's esophagus had higher prevalence of diabetes with complications (38.1% vs 28.6%).

Conclusion

While Barrett's esophagus is still relatively uncommon in patients with gastroparesis, there are certain groups at higher risk for developing it. One result of this study showed that older individuals with gastroparesis tended to develop Barrett's esophagus. It may follow that these individuals possibly had gastroparesis for a longer period of time, and had long standing reflux disease. Males and white patients were more likely to develop Barrett's, and on average, had higher rates of gastroparesis.

Gastroparesis	Without Barrett's	With Barrett's	P-value	95% CI
	N=188,610	N=2,136		
Patient Age, mean (SD)	51.5 (17.3)	56.9 (14.2)	<0.05	(-6.12- -4.65)
Sex			<0.05	
Female N(%)	123,279 (65.4%)	1,123 (52.6%)		
Male N(%)	65,331 (34.6%)	1,013 (47.4%)		
Race			<0.05	
White N(%)	110,950 (58.8%)	1,752 (82.0%)		
Black N(%)	48,669 (25.8%)	199 (9.3%)		
Hispanic N(%)	20,709 (11.0%)	133 (6.2%)		
Asian or Pacific Islander N(%)	2,624 (1.4%)	12 (0.6%)		
Native American N(%)	1,446 (0.8%)	10 (0.5%)		
Other N(%)	4,214 (2.2%)	30 (1.4%)		
Hospital teaching status, N(%)			0.054	
Rural, non-teaching	16,940 (9.0%)	202 (9.5%)		
Urban, non-teaching	66,882 (35.5%)	803 (37.6%)		
Urban teaching	104,788 (55.6%)	1,131 (52.9%)		
Bed size, N(%)			0.18	
Small	25,178 (13.3%)	293 (13.7%)		
Medium	52,152 (27.7%)	624 (29.2%)		
Large	111,280 (59.0%)	1,219 (57.1%)		
Diabetes without complications	23,249 (12.3%)	284 (13.3%)	0.18	
Diabetes with complications	71,849 (38.1%)	611 (28.6%)	<0.05	
Elixhauser Comorbidity Index, mean (SD)	6.0 (9.5)	6.0 (9.5)	0.81	
LOS, days (SD)	5.8 (38.5)	5.8 (5.9)		(-1.64- 1.62)
Mortality, N (%)	2,409 (1.3%)	19 (0.9%)	0.11	