Abstract 101

Title: **Incidence of Gastrointestinal Tract and Motility Disorders in Post-Cardiac Arrest Patients**

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Background: In the US, 209,000 patients are treated for cardiac arrest annually. Of these patients, only about 10.8% of in-hospital cardiac arrests (CA) survive. This is largely dependent on the etiology of CA, duration of CA, and quality of cardiopulmonary resuscitation. Although cardiac arrest often has an underlying cardiopulmonary etiology, post-cardiac arrest (PCA) morbidity affects all organ systems. PCA functionality is typically quantified by voluntary measures, like activities of daily living. Our analysis seeks to qualify PCA functionality with involuntary measures, such as gastrointestinal motility.

Methods: The National Inpatient Sample 2001-2013 database was queried for patients with a diagnosis of a history of CA using International Classification of Diseases, Ninth Revision (ICD-9) codes. Constipation, celiac disease, gastroparesis, dysphagia, gastroesophageal reflux disease (GERD), and irritable bowel syndrome (IBS) were identified with their respective ICD-9 codes. Prevalence of these disease were taken from accepted rates identified in the American Gastroenterological Association publications.

Results: There were 127,192 patient admissions identified that had an associated diagnosis of PCA. Our analysis found that PCA patients had a higher prevalence of constipation (3% vs. 2%), celiac disease (1% vs. 0.1%), and gastroparesis (0.9% vs. 0.0063%) compared to the national average. The prevalence of dysphagia remained unchanged at 4% when compared to the general population. The prevalence of GERD (18-27% vs. 13.3%) and IBS (0.6% vs. 10-15%) were lower in the PCA group.

Conclusion: Cardiac arrest is a devastating physiologic stressor to the body. Although patients who are PCA suffer from debilitating morbidity, long-term quality of life years in these patients approaches that of the general population after 6-12 months. However, our analysis shows the prevalence of several motility disorders is increased in PCA when compared to the general population. This is likely due to shunting of blood to vital structures like the heart and brain during the interim CA low-flow state. Further investigation is needed to better understand this the risks and protective factors associated with CA and gastrointestinal motility.

Abstract 101