Assessing the Weekend Effect on Outcomes of Adults with Non-variceal Upper Gastrointestinal Hemorrhage as the Reason for Emergency Department Presentation in the United States: Analysis of the Nationwide Emergency Department Sample.

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Introduction

Non-variceal upper gastrointestinal hemorrhage (NVUGIH) is defined as bleeding proximal to the ligament of Treitz in the absence of oesophageal, gastric or duodenal varices. This study assessed if there was a difference in outcomes among patients in the Emergency Department (ED) with non-variceal upper gastrointestinal hemorrhage who presented over the weekend compared to weekdays.

Methods and Materials

We queried the US Nationwide Emergency Department Sample (NEDS) for 2018. The NEDS is coded using the International Classification of Diseases 10th Revision coding system. The first listed diagnosis was taken as the reason for the ED encounter in keeping with NEDS research methods. The study population included all ED encounters with a principal encounter diagnosis of NVUGIH obtained from literature review. We excluded encounters less than 18 years from the study. Outcomes assessed included a comparison of ED discharge rates, the mean number of procedures in the ED (EDP), mean total ED charges in USD, inpatient length of hospital stay (IPLOS), and hospital mortality rates between weekday and weekend visits. Multivariable regression analysis was performed to adjust outcomes for age categories, sex, hospital teaching status, hospital region, income quartile, primary payer, and Elixhauser Comorbidity Index (ECI).

Results

There were 229,920 presentations for NVUGIB to the ED in 2018, with 25% occurring over the weekend. The weekend encounters had a statistically significantly lower mean age (57.8 ±21.1 [standard deviation] vs 58.4 ±20.8 years, p=0.009), and a lower mean ECI (2.7 vs 2.8, p=0.010). There was no difference in sex, primary payer, and median income distribution.

Among encounters for NVUGIH, a weekend visit was associated with a lower adjusted odds ratio (aOR) of ED discharge (aOR:0.94, p=0.011) and increased IPLOS (4.1 vs 4.0 days, p=0.028). There was no difference in mortality (0.9 vs 1.1%, aOR:0.88, p=0.200), mean EDP, and mean total ED charges when compared to weekday encounters.

Discussion

We postulate that the elderly, non-working population may have led to higher ECI and age in weekday presentations. The 6% decreased odds of being discharged from the ED over the weekend may be due to decreased availability of routine GI specialty services to properly triage patients. This likely impacted the duration of hospitalization, which was longer over the weekend. There is a need for prospective quality initiative projects to elucidate potential factors for the weekend effect on NVUGIH.

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