STATISTICAL ANALYSIS PLAN

TITLE: A comparison of early deployment of a video capsule (Endocapsule EC-10: Olympus Tokyo. Japan) in the Emergency Department versus conventional work-up of non-hematemesis gastrointestinal bleeding [NHGIB].

NCT02442830

DAVID R. CAVE, MD, PHD, PRINCIPAL INVESTIGATOR

STATISTICAL ANALYSIS PLAN

Study outcomes:
The primary outcome for this study was the rate of localization of bleeding during hospitalization. Localization of bleeding was defined as identification of blood or identification of a lesion with high-risk stigmata of recent hemorrhage (SRH). Secondary outcomes included, overall rate of localization of bleeding by the end of admission, anatomic location of bleeding or the bleeding source, rate of endoscopic therapy, rate of readmission, rate of diagnosis of vascular lesions (defined as Dieulafoy's lesions or angioectasias), rate of re-bleeding within 30 days of discharge, rate of all-cause mortality within 30 days of hospitalization, cumulative direct hospital costs by the end of admission, and overall rate of identifying the etiologic diagnosis.

Sample size calculation:
The study was planned as a superiority trial and the estimated probability of localization of bleeding during hospitalization in the Early Capsule arm to be two times greater than that of the Standard of Care arm (i.e. estimated hazard ratio of 2.00). We found no prior studies similar to our methodology, so prior experience at our institution guided the estimation of effect. Power analysis revealed that for this effect size to be detected (80% chance) as significant at the 5% level, a sample of at least 72 patients (36 per group) would be required.

Statistical analysis:
Patient characteristics were described as means with standard deviation (SD) or as proportions. Time to localization and time to first procedure were described using medians with interquartile range (IQR). Hospital costs were described in US dollars (USD).

Independent variables selected for analysis included those previously suggested as prognostic indices for NHGIB. Variables chosen for analysis included gender, race, age, vital signs at admission, use of anticoagulants, use of non-steroidal anti-inflammatory drugs (e.g. aspirin and ibuprofen; NSAIDs), use of a $P2Y_{12}$ inhibitor (e.g. clopidogrel), factors that contribute to the Glasgow-Blatchford Score, and type of bleeding at admission (i.e. hematochezia, melena, or symptomatic anemia).

Univariate analyses involved Wilcoxon-Rank sum tests for continuous variables and Chi-square or Fisher's Exact tests for binary variables. A Kaplan-Meier survival analysis with a Log-rank test compared the cumulative incidence of endoscopic localization of bleeding for the two groups. For multivariate analyses, independent variables with a difference at $p<0.10$ following univariate analysis or those noted to be unevenly distributed between the two cohorts were included as covariates. A p-value of less than 0.05 was significant. Statistical analysis was performed using STATA 13.