Title: Risk factors for hospitalizations (HOS) among older adults with gastrointestinal (GI) cancers receiving chemotherapy

Background: Older adults undergoing chemotherapy for GI cancers are at increased risk of HOS due to treatment related toxicity; however, there are limited data regarding which individuals are at greatest risk. In this analysis, we sought to identify risk factors for HOS among older adults with GI cancers receiving chemotherapy.

Methods: We performed a secondary analysis of patients age ≥ 65 years with GI cancer who participated in a prospective study used to develop and validate a geriatric assessment (GA) based chemotherapy toxicity score for older adults with cancer. The incidence of HOS was determined. The following patient characteristics were captured pre-chemotherapy: demographics, cancer type and stage, laboratory values, type of chemotherapy, and pretreatment GA measures (functional status, comorbidity, psychological state, cognitive function, nutritional status, and social support). Univariate and multivariate logistic regressions were used to estimate the odds ratio (OR) to identify potential risk factors.

Results: A total of 199 adults age 65+ (median 73; range 65-94) with GI cancers (Stage I-III 42%, stage IV 58%) receiving chemotherapy were included in this analysis. Sixty five (32.6%) patients had ≥1 HOS. In univariate analysis, hospitalized patients were more likely to be female (p=0.02), have stage IV disease (p=0.03), have a diagnosis of non-colorectal GI cancer (p=0.04), have polypharmacy (≥ 5 medications, p<0.01), decreased hearing (p=0.05), cardiac comorbidity (p<0.01), and low serum albumin (p=0.05). On multivariate analyses, patients who were female (OR =2.06, 95% CI: 1.05-4.06), with cardiac comorbidity (OR 3.73, 95% CI: 1.78-7.83), or a diagnosis of stage IV non-colorectal GI cancer (OR=3.75, 95% CI: 1.50-9.39) were more likely to be hospitalized.

Conclusions: HOS among older adults with GI cancers receiving chemotherapy are common. Female sex, cardiac comorbidity, and a diagnosis of stage IV non-colorectal GI cancer are risk factors for HOS. Further studies focused on understanding key vulnerabilities among this population are warranted in order to devise interventions to decrease chemotherapy toxicity related HOS.