

OC-012

**GASTRIC ACID SUPPRESSION AND OUTCOMES FROM CLOSTRIDIUM DIFFICILE INFECTION: A POPULATION-BASED STUDY**

doi:10.1136/gut.2011.239301.12

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**Introduction** Several studies show an increasing incidence and severity of *Clostridium difficile* infection (CDI). Use of gastric acid suppression medications like proton pump inhibitors (PPI) has been shown to predispose hospitalized patients to CDI. The need for discontinuation of these medications in patients with CDI is controversial. We compared clinical features, treatment and outcomes in a population-based cohort of adult patients with CDI on acid suppression medications to a cohort not on these medications.

**Methods** A computerized diagnostic index, capturing all patient encounters for Olmsted county residents, identified

adult CDI cases from 1991–2005. 'Definite' CDI was defined as positive stool toxin by Enzyme Immune Assay, in patients with diarrhoea (3 or more bowel movements/day), abdominal pain or unexplained leucocytosis. Severe CDI was defined by a white blood cell count more than 15,000/uL or a creatinine rise of greater than 50% from baseline. Recurrent CDI was defined if diagnostic criteria were met within 8 weeks of diagnosis after symptom resolution. Treatment failure was defined as a change in treatment within 14 days due to non-response.

**Results** There were 385 definite CDI cases with mean age 60.6 years and 65.5% females. A third of patients (36.3%) were on gastric acid suppression agents (23.3% on PPI, 13.5% on H2 blockers and 0.5% on both). On univariate analysis, patients on gastric acid suppressive medications were significantly older (69 vs 56 years,  $p < 0.001$ ) and more likely to have severe infection (34.2% vs 23.6%,  $p = 0.02$ ), compared to patients not on acid suppression. On adjusting for age by logistic regression, there was no difference in risk of severe infection in patients on acid suppression versus not. Initial treatment (metronidazole in 88% cases), treatment failure (18.5% vs 20.3%) and CDI recurrence (26.4% vs 32.5%) were similar in the two groups.

**Conclusion** In our population-based cohort, about one third of the patients were on a gastric acid suppression agent. These patients were older, but had similar severity, initial treatment, response and recurrence rates. It might be reasonable to continue these agents in patients with CDI, if clinically indicated. More studies are needed to further study the effect of these drugs in CDI.

**Competing interests** S. Khanna: None Declared, S. Aronson: None Declared, P. Kammer: None Declared, D. Pardi Grant / Research Support from: Research support from ViroPharma for this study.

**Keywords** acid suppression, clostridium difficile, recurrence, severity.