May 16th, 1:45 PM

Gastrointestinal Perforations: Examining the Overlooked Unintentional Consequences of Our Nation’s Epidemic of Antibiotic Exposure

Vijaya T. Daniel  
*University of Massachusetts Medical School*

Stacy B. Sanders  
*University of Massachusetts Medical School*

M. Didem Ayturk  
*University of Massachusetts Medical School*

*See next page for additional authors*

Follow this and additional works at: [https://escholarship.umassmed.edu/cts_retreat](https://escholarship.umassmed.edu/cts_retreat)  
Part of the Surgery Commons, and the Translational Medical Research Commons

[https://escholarship.umassmed.edu/cts_retreat/2017/posters/16](https://escholarship.umassmed.edu/cts_retreat/2017/posters/16)

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in UMass Center for Clinical and Translational Science Research Retreat by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
Presenter Information
Vijaya T. Daniel, Stacy B. Sanders, M. Didem Ayturk, Beth A. McCormick, and Heena P. Santry

Keywords
gastrointestinal perforations, antibiotic exposure, antibiotics, elderly, microbiota

Creative Commons License
This work is licensed under a Creative Commons Attribution-Noncommercial-Share Alike 3.0 License.
GASTROINTESTINAL PERFORATIONS: EXAMINING THE OVERLOOKED UNINTENTIONAL CONSEQUENCES OF OUR NATION’S EPIDEMIC OF ANTIBIOTIC EXPOSURE

Vijaya T. Daniel MD, MPH1,2, Stacy B. Sanders MD, MS, MHA1,2, Didem Ayturk MS2, Beth A. McCormick PhD3, Heena P. Santry MD, MS2,4
1Surgical Research Scholars, Department of Surgery, 2Department of Surgery, 3Center for Microbiome Research, 4Department of Quantitative Health Sciences, University of Massachusetts Medical School

Objective: More than 266 million courses of antibiotics are dispensed to outpatients annually in the US, with the rising elderly population consuming a substantial number of antibiotics. At least 30% of these antibiotics prescribed are unnecessary. Alterations in gut microbiome are known to cause stomach and small intestine (SSI) perforations. However, the impact of antibiotic exposure outcomes of SSI perforations among the elderly has not been studied. We examined the relationship between antibiotic exposure, as a proxy for microbiome modulation, and SSI perforation outcomes in a nationwide sample of elderly patients.

Methods: A 5% random sample of Medicare beneficiaries (2009-2011) was queried to identify patients with SSI perforations. Previous outpatient antibiotic exposure (0-30, 31-60, 61-90 days prior to admission) was assessed. Clinical characteristics were compared between no previous antibiotic exposure (NPA) and previous antibiotic exposure (PA) patients. Primary outcome was in-hospital mortality. Secondary outcomes included length of stay and 30-day readmission. Univariate and multivariable regression analyses were performed.

Results: Overall, 401 patients ≥ 65 years had SSI perforations (68.3% with NPA and 31.7% with PA). Mean age (± SD) was 80 years (± 8). Overall in-hospital mortality was 13%. There was a significant difference in the rates of mortality (12% in NPA vs. 18% in 0-30 days PA, 17% 31-60 days PA, and 8% 61-90 days PA, P= 0.002). After adjustment of other factors, a trend toward increased in-hospital mortality was observed among patients in 0-30 days PA (odds ratio [OR] 2.0, 95% confidence interval [CI] (0.9, 4.7) and was significantly associated with ICU admission (OR 4.3, 95% CI (1.8, 10.2).

Conclusion: Recent antibiotic use increases illness severity and may increase mortality among elderly patients with SSI perforations. Exposure to antibiotics, one of the most modifiable determinants of microbiota, should be minimized in the outpatient setting.

Contact:
Vijaya T. Daniel, MD, MPH
UMass Memorial Medical Center
Vijaya.Daniel@umassmemorial.org