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Continued Use of Proton Pump Inhibitors and Risk for Recurrence of Clostridium Difficile Infection-A Retrospective study

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OBJECTIVE

- To determine if the continued use of proton pump inhibitors leads to an increased risk of recurrent *Clostridium difficile* infections.

BACKGROUND

- Alterations in the gut microbiome can allow for overgrowth of bacteria leading to infection. Common disruptions in the normal gut flora can be attributed to antibiotics and acid suppressing medications.
- Proton pump inhibitors (PPIs) block gastric H₂ K-ATPase, and inhibits gastric acid secretions. These are typically used for the indication of gastroesophageal reflux disease or peptic ulcers. PPIs can alter the gut microbiome by decreasing the acidity of the stomach allowing for potential overgrowth of normal gut colonizing bacteria.
- Clostridium difficile* is a spore-forming, gram-positive anaerobic bacillus bacteria normally colonized in the large intestine, in physiological amounts it does not cause infection. When given the opportunity in the presence of decreased normal gut flora, *C.difficile* can overgrow and release toxins A & B causing severe diarrhea. Using PPIs before fully recovering from a *C.difficile* infection is suggested to increase patient risk of recurrent episodes for infectious *C.difficile*.

METHODS

- A retrospective cohort study including sites at Parkview Regional Medical Center, Parkview Hospital Randallia , Parkview Dekalb Hospital, Parkview LaGrange Hospital, Parkview Wabash Hospital, and Parkview Noble Hospital was conducted for hospital admissions between January 1, 2021, to April 1, 2022.
- Inclusion criteria: Diagnosis of *C.difficile*, ≥ 18 years of age
- Exclusion criteria: Failure to complete 7-day course for the initial *C.difficile* infection, diarrhea caused by another indication, or usage of gastric suppression medications other than PPIs
- Patient data was collected from the electronic medical record at Parkview Hospitals.
- Readmission rates were assessed and patient's usage of a PPIs following the initial *C.difficile* diagnosis were documented.
- 78 hospital admissions with a *C.difficile* diagnosis were evaluated to determine the correlation between readmission rates and PPI usage.

RESULTS

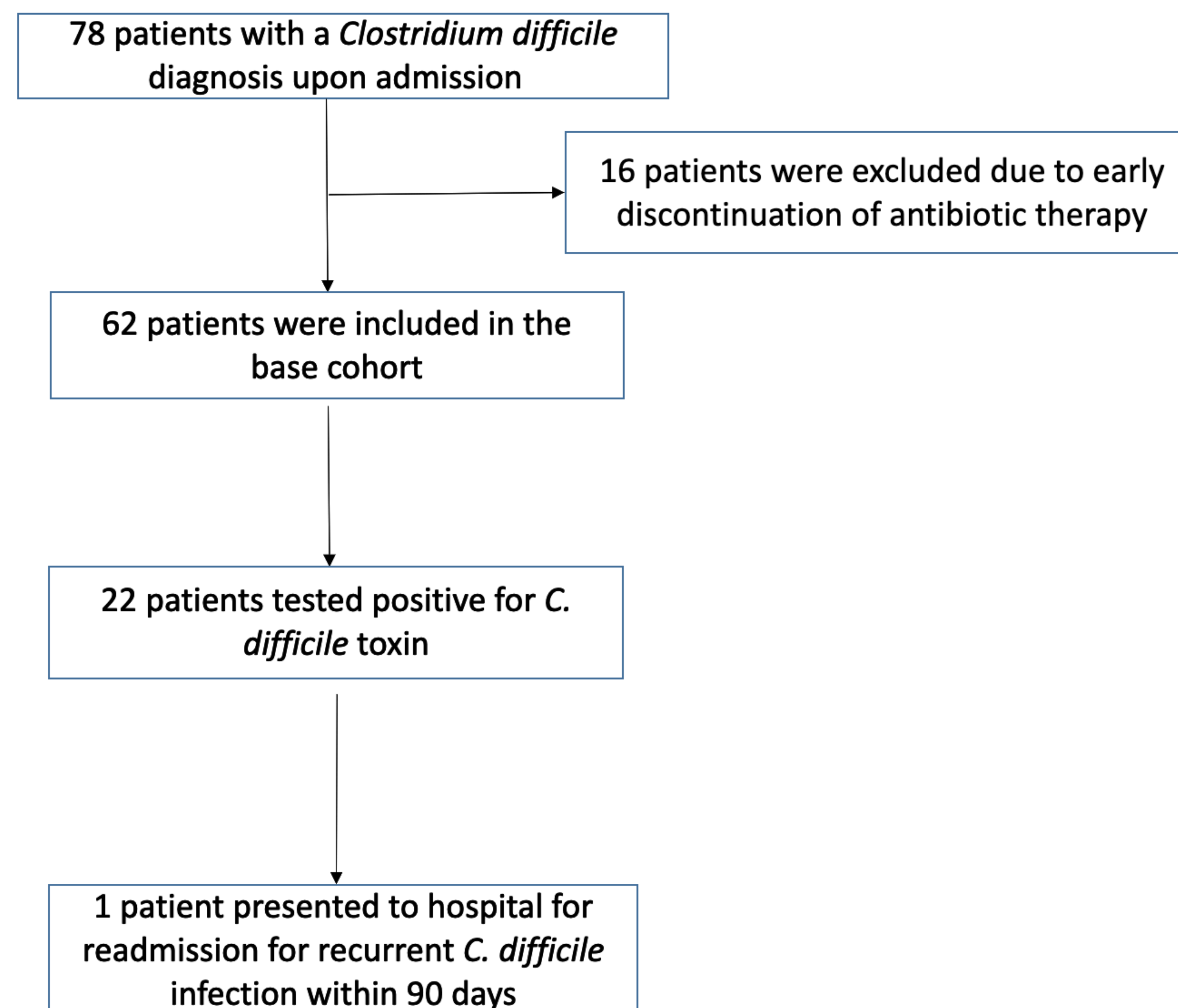


Figure 1. Study Flowchart

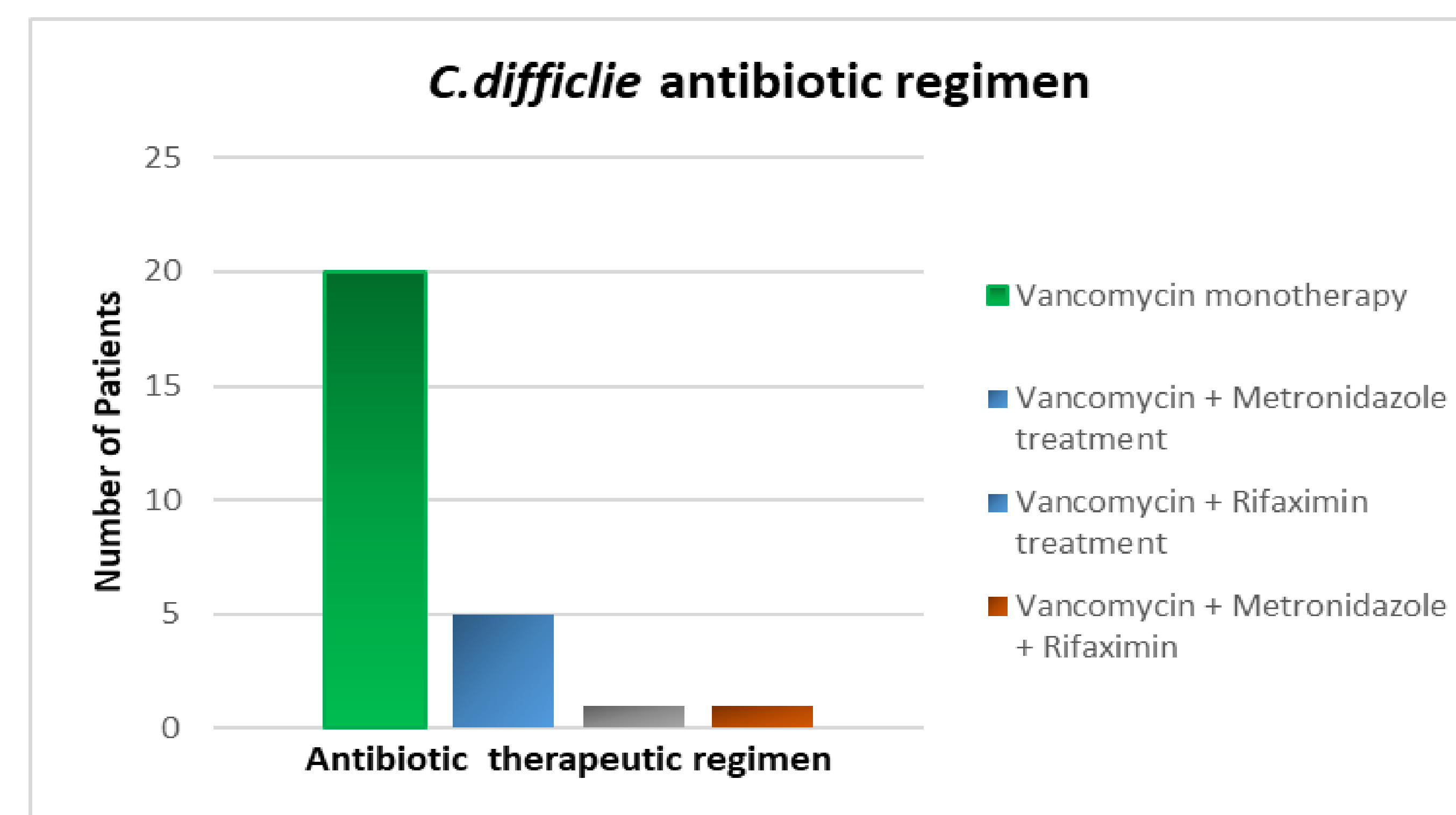


Figure 2. C. Difficile antibiotic regimen

Baseline Characteristics

Age	61.3 years old
Female (%)	46 (58.9%)
PPI use before admission (%)	37 (47.4%)

Table 1. Patient characteristics

RESULTS

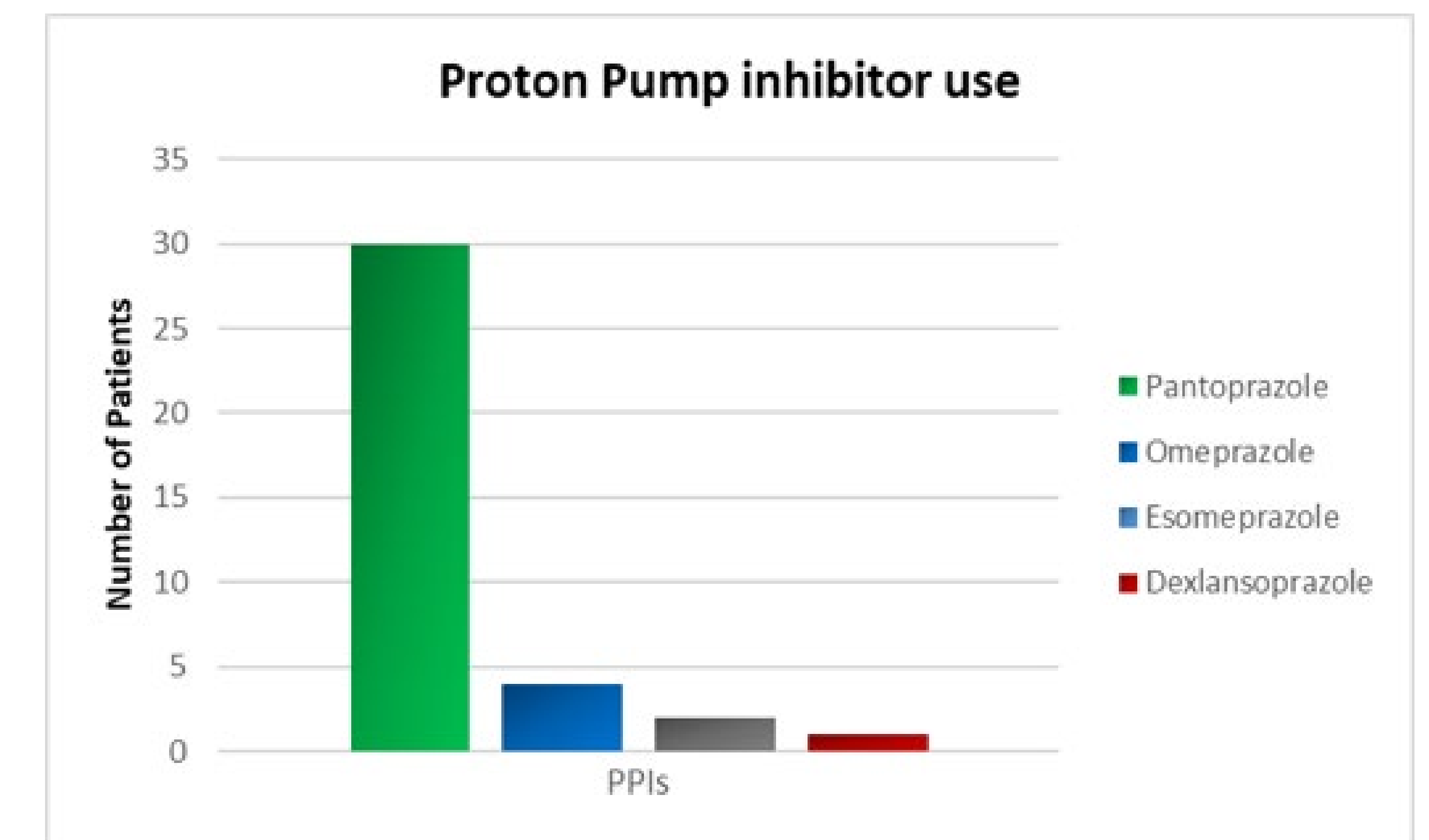


Figure 3. Proton Pump inhibitor use following hospitalization

DISCUSSION & CONCLUSIONS

- This study did have a small sample size which decreased the statistical significance of some data points. Other patient-related factors including medication adherence could have been beneficial in determining if other confounding factors increase the risk of recurrent *C. difficile*.
- Our study showed that the continued use of proton pump inhibitor therapy did not result in patients having a higher risk of recurrence of *Clostridium difficile* infection after an initial infection. These findings are consistent with previous studies conducted by other institutions.

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Disclosure

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:
 Cecilia Schowe: Nothing to disclose | Breia Leavell: Nothing to disclose | Cole Luty: Nothing to disclose