High rates of Clostridioides difficile colonization among patients undergoing gastrointestinal endoscopy

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INTRODUCTION

Endoscopy is an essential part of medical care for both diagnostic and therapeutic indications. Gastro-intestinal endoscopy (GIE) can also provide a window into individuals' microbiome. Clostridiodes difficile infection (CD) is a common healthcare associated infection (HAI) that causes significant morbidity and mortality. The aim of our study is to evaluate the presence of CD in patients undergoing GIE for cancer screening or other indications.

METHODS

A prospective non-randomized study was performed between December 2021 and April 2022 at GIE suite at an academic medical center. The study included 115 individuals who underwent GIE for screening and other medical reasons (110 outpatients and 5 inpatients). Electronic health records were reviewed for procedure-related information as well previous infection or colonized with CD and resistant bacteria within the past 2 years. A water sample was obtained from the GIE used immediately after use and after processing and high-level disinfection. An environmental culture was used for CD detection.

RESULTS

The study had 74 (64%) females and 41 (36%) males with mean age of 57 with a standard deviation of 13 years. The procedures were done by 12 physicians with an average time for the procedure of 37 with a standard deviation of 20 minutes. Only 1 patient was diagnosed with CD previously. However, environmental CD culture was positive in 28 (24%) patients. Post disinfection samples were all negative for CD. The majority of the patients had no multidrug resistant organisms 3 (2.6%). Colonoscopies were predominantly performed for colon cancer screening 104 patients (90%).

DISCUSSION

Colonoscopic examination revealed high prevalence of within the community. Endoscope processing was effective in eliminating CD from the GIE. Hospital associated CD infection could be originating from a community source. Colonized hospitalized patients are at high risk for developing CD disease especially after antibiotic use.