Oral Vancomycin Versus Fidaxomicin for *Clostridiodes difficile*: A Comparative Retrospective Evaluation across a Large, Multi-center Healthcare System

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Background

- The Infectious Diseases Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA) recently published the 2021 Focused Clinical Practice Guideline Update on Management of *Clostridioides difficile* in adults that recommends fidaxomicin as a preferred treatment for initial and recurrent C. difficile infection (CDI) over oral vancomycin.[1] The aim of this study was to evaluate clinical outcomes of adult inpatients with CDI diagnosis treated with fidaxomicin versus oral or rectal vancomycin.

Methods

- The patient population included adult inpatients 18 years or older admitted to a hospital within the healthcare system with CDI International Classification of Diseases, Tenth Revision (ICD-10) codes from January 1, 2017 to October 31, 2021. Data was obtained for inpatients with a discharge diagnosis of CDI and receiving fidaxomicin, oral or rectal vancomycin, or no receipt of either antibiotic.
- Readmission was defined as readmittance to the healthcare system within 8 weeks and a CDI diagnosis. Recurrence risk factors were defined as age 65 years or older, immunocompromised based on ICD-10 codes, and severe CDI defined as white blood cell count > 15 cells/mm PLUS serum creatinine > 1.5 mg/dL.

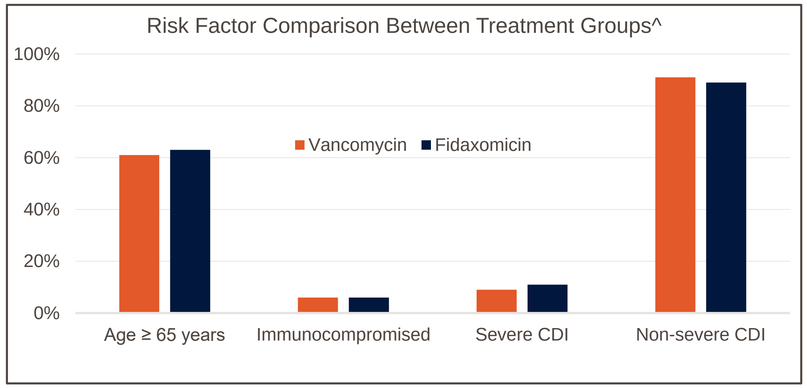
Primary Results

Inpatients with a CDI Diagnosis: n = 45,544
Readmission rate p-value <0.001

	Vancomycin	Fidaxomicin
Administration Rate	76.3% (n = 34,7430)	6.0% (n = 2,719)
Avg. Length of Stay	10.4 Days	12.9 Days
Median Length of Stay	7 Days	9 Days
Readmission Rate*	14.6% (n = 5,059)	18.5% (502)
Antibiotic Administration at First CDI Occurrence	80.9% (n = 28,094)	56.9% (n = 1,546)
Readmission rate* with Antibiotic at First CDI Occurrence	13.0% (n = 3,645)	14.8% (n = 228)

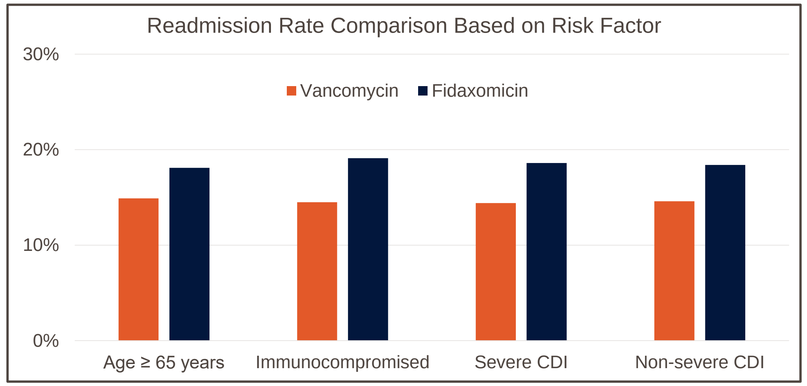
*** Includes only readmissions where the patient was diagnosed with CDI within 56 days of antibiotic administration**

Subgroup Analysis



Number of Risk Factors		Vancomycin	Fidaxomicin
0	n	21,238 (61%^)	1,706 (63%^)
	Readmission Rate	14.9%	18.1%
1	n	1,949 (6%^)	162 (6%^)
	Readmission Rate	14.5%	19.1%
> 1	n	3,282 (9%^)	306 (11%^)
	Readmission Rate	14.4%	18.6%

^ Represents percentage of patients with the number of risk factors above who received that antibiotic



Discussion

- This analysis of inpatients admitted to an HCA Healthcare facility with a first occurrence of *CDI* found no difference in readmission rates between those who received vancomycin through oral or rectal route versus those who received fidaxomicin. There were no significant differences between groups when comparing risk factors for recurrence of CDI. Additionally, there were no difference in readmissions when results were stratified based on number of risk factors (0, 1, > 1) for recurrence. Current adult clinical guidelines are conflicting between IDSA/SHEA and the American College of Gastroenterology (ACG) on fidaxomicin's place in therapy for initial CDI occurrence. ACG recommends oral vancomycin or fidaxomicin and IDSA/SHEA recommends fidaxomicin as the preferred treatment over oral vancomycin.[1,2] Other considerations, such as patient cost prohibition of therapy and financial impact is commonly factored in to clinical decision making and cost effectiveness analyses for treatment of initial CDI episode have been published, which the majority have deemed fidaxomicin as the most cost effective treatment with the acquisition cost being offset with reduced recurrence and readmissions in the fidaxomicin group.[3,4,5] This analysis provides a more robust quantity of patients treated with fidaxomicin than the previous studies included in the clinical guidelines updates from IDSA/SHEA and ACG. This study helped to evaluate current practice utilizing oral vancomycin as first choice over fidaxomicin for initial CDI occurrence.

Conclusion

- The results of this study demonstrated that fidaxomicin did not result in a shorter length of stay or lower readmission rate compared to oral/rectal vancomycin. This study supports the continued use of oral/rectal vancomycin for CDI without preference.

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