Background. Clostridiodes difficile Infection (CDI) is a highly contagious bacterium that can be transferred from an infected surface. In this study, the Nationwide Readmissions Database was used to assess the risk of 30-, 60-, and 90-day readmissions in patients with comorbid CDI and renal failure (RF).

Methods. Using the Nationwide Inpatient Sample (NIS, 35 million hospitalizations/year) and the Nationwide Readmissions Database (NRD, 36 million/year), CDI in renal insufficient patients were identified. Years 2001–2014 of the NIS, as well as years 2010–2014 of the NRD were used for analysis. Chronic kidney disease (CKD) was based on the stage of the disease using ICD-9-CM coding (585.1–585.5). ICD-9-CM 585.6 was used for end-stage renal disease (ESRD). All analyses were done in R version 3.4.3.

Results. Over the 14 year period, the proportion of inpatients with CDI and RF increased from 0.004% (95% CI, 0.0038%-0.0042%) to 0.010% (95% CI, 0.0100%-0.0104%) in 2014. Inpatient RF and CDI increased a mean of 220,827 people over the 14 years. Inpatient CDI and RF prevalence is described as linearly increasing trend (Figure 1). Median age (2001–2014) for RF patients with CDI decreased 5 years to 68 (95% CI, 68–69). Using this model, expected CDI infections in RF to increase to 437,605.1 (95% CI, 427,984.2–447,380.8) hospital inpatients in 2018. In patients with CDI and CKD, ESRD is a significant predictor of 30-, 60-, and 90-day readmission.

Conclusion. Using the NIS and NRD identified ESRD patients as a significant predictor of readmission for 30-, 60-, and 90-days. CDI infections in ESRD are expected to increase substantially by 2018.

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2396. Clostridium difficile Infection is Children with Sickle Cell Disease: An Uncommon Entity
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Background. Children with sickle cell disease (SCD) have numerous risk factors for intestinal dysbiosis, including frequent hospitalization, iron overload, antibiotic exposure including penicillin prophylaxis, hypoxia, and altered gut permeability. Many of these conditions are also established risk factors for C. difficile infection (CDI); however, the incidence of CDI in children with SCD has not been characterized.

Methods. We performed a 10-year retrospective review from 1/2008–December 2017. Patients who qualified with CDI were either admitted or within 2 weeks of discharge from our site and had a positive test. A positive test was defined as a positive glutamate dehydrogenase 1 test in conjunction with either a positive ELISA or a positive PCR for toxin. Three investigators independently reviewed if patients had active diarrhea during the time of their positivity. Patients excluded were <2 years old and patients undergoing a stem cell transplant (SCT) or irritable bowel disease (IBD) at the time of a positive test. Chi-square test with Yates correction, descriptive statistics were used when comparing groups.<p>Results. Over a 10-year period (2008–2017), there were 5666 admissions for children with SCD, corresponding to 25,915 hospitalization days and 957 unique patients. The average age of this cohort at the time of admission was 10.6 ± 6.7 years; 51.7% were male. One patient qualified; a 12-year-old who developed diarrhea and abdominal pain after recent hospitalization for pneumonia (Figure 1). This yielded a CDI incidence of 0.39/10,000 patient-days or 0.18 cases per 1000 admissions (Table 1). There were 208 cases of CDI in non-SCD children, with an incidence of 5.53/10,000 patient-days (P < 0.001) or 2.77 cases per 1000 admissions (P < 0.001) (Table 2) during the study period. In 2015–2017, there were no cases of CDI in 957 SCD patients, of which 218 were on penicillin prophylaxis.

Conclusion. There is a very low incidence of CDI in children with SCD despite significant antibiotic exposure and other risk factors for intestinal dysbiosis. These findings are consistent with recent studies in adults (N Engl J Med 2019; 380:887–888) and suggest that sickle cell patients may somehow be less vulnerable to CDI. Additional studies are needed to define the host and biome factors that confer this protection.

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