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Presentation Preference Oral

CLOSTRIDIOIDES DIFFICILE RIBOTYPE DISTRIBUTIONS FOUND IN THE HOSPITAL ENVIRONMENT VERSUS CLINICAL STRAINS

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PURPOSE: The aim of this study was to assess differences in the distribution of *Clostridioides difficile* ribotypes infecting patients versus those present in the hospital environment.

METHODS: A multicenter analysis was conducted using environmental and clinical samples obtained from three Texas hospitals (2017). Leftover stool samples from *C. difficile*-infected patients were collected as part of an ongoing surveillance effort and sent to a central lab for PCR-ribotyping. Investigators collected environmental swabs from each hospital including non-patient care areas, employee shoe bottoms, and patient care areas inside and outside of patient rooms. Environmental swabs were screened for *C. difficile* using CCFA plates and ribotyped.

RESULTS: A total of 1,200 swabs were collected from environmental swabbing (n=400/hospital) along with 137 clinical strains. Of the 1,200 environmental swabs, 310 (25.8%) tested positive for *C. difficile* and ribotypes were obtained for 235 (19.6%) isolates. Of the clinical samples included, 88 (64.2%) had confirmed ribotypes. The most common ribotypes (RTs) from environmental sampling were RT106 (n=46, 19.6%), RT019 (n=36, 15.3%), and RT014-020 (n=11, 4.6%), while the most common clinical ribotypes were RT027 (n=18, 20.5%), RT106 (n=13, 14.8%), and RT014-020 (n=10, 11.4%). Differences were noted in the ribotype distributions between environmental vs clinical isolates overall and within each facility.

CONCLUSIONS: This multicenter study demonstrated that many of the same *C. difficile* ribotypes causing infection are present in their surrounding hospital environments, but in differing proportions. Our results imply variables more predictive than ribotype abundance may be influencing strain transmission into patients, but larger studies are warranted.