Clostridium difficile—Associated Diarrhea in the Pediatric Burn Unit: Clinical Impact and Risk Factors

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Clostridium difficile (C. difficile), is a spore forming gram-positive anaerobic bacillus linked to nosocomial diarrhea. C. difficile has been associated with antibiotic use and is considered to lead to worst survival among critically ill patients with a diagnosis of diarrhea.

Our primary working hypothesis was that C. difficile infection impacts morbidity and mortality outcomes of pediatric burn patients.

2840 records of pediatric burn patients were reviewed. Stool specimens from 289 patients underwent immunoassay for C. difficile Toxin A and B. Patients presented at least two consecutive days of stool output >20 ml•Kg^-1•day^-1. A matched case-cohort and a matched case-control studies were performed.

Eighteen children with major burns acquired CDAD. After controlling for relevant confounders, in-hospital-attributable mortality in the CDAD group was 28 percent (OR=5.4, CI=1.7–16.7, P=0.01). Length of stay as a function of %TBSA burned was increased in the CDAD group vs. the non-CDAD diarrhea group (0.82±0.4 vs. 0.60±0.4, P=0.03). Diarrhea days complicated by acidosis were increased in the CDAD group (13±16 vs. 4±5, P<0.001). Eighteen risk factors were evaluated, CDAD patients were more likely to present with concomitant inhalation injury (59% vs. 31%, P=0.04).

Acquiring CDAD in the burn unit is associated with increased post burn mortality. C. difficile was associated with an increased tendency to present acidosis after controlling for severity of injury and may have played a role in the increase of the length of hospital stay as function of %TBSA burned.