

**Fecal Microbiota Transplant as a Treatment Strategy for  
*Clostridium difficile* Infection in Hospitalized Patients with  
Burns and Soft Tissue Injuries**

**Friday, November 9, 2018  
3:00 – 3:15 pm**

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**Objective:**

Upon completion of the lecture, attendees should be better prepared to:

- Examine the impact of *Clostridium difficile* on the burn population
- Describe potential benefits of fecal microbiota transplantation for the treatment of *Clostridium difficile* in the burn population

**Abstract:**

**Introduction:** *Clostridium difficile* (*C. diff*) infection prolongs hospitalization, increases mortality and creates a substantial increase in health service and economic burdens. Fecal microbiota transplant (FMT) has been described in the literature as an alternative treatment for *C. diff* with cure rate reported as high as 90 percent. FMT was approved by the Food and Drug Administration as a treatment for *C. diff* in 2013. The microbiota transplant has proven effective administered during colonoscopy, via enema, or in nasogastric/nasoduodenal tube. FMT specifically in the burn population has not been studied.

**Methods:** The study was performed at an American Burn Association (ABA) verified region burn center. All patients admitted to the burn center with burn injury or soft tissue defect with *Clostridium difficile* infection over a 5-year period were included. IRB approval was attained for this retrospective review excluding those under 16 or over 89 years of age.

The FMT algorithm for the Burn Center has inclusion and exclusion criteria established as part of the FMT implementation plan. We have an established consent process for the FMT and risks and benefits are outlined for patients and families. Nursing administration via the enema or nasogastric/nasoduodenal route has been utilized successfully. If colonoscopy route is requested, the gastroenterologist or surgeons perform the FMT as part of the procedure. FMT is a specialized procedure and several considerations should be addressed prior to implementation including the timing of specimen thaw by the microbiology lab. The considerations are outlined clearly in the FMT algorithm and have contributed to the success of our program.

**Results:** A total of 58 patients with *Clostridium difficile* infection were reported in our burn center during the research window out of a total of 1,979 patients. After recent creation of FMT treatment protocol in the facility, 4 patients received the transplant to treat the infection. No evidence of complications of the FMT presented in the chart review. The FMT was effective at halting the disease process and showed a decrease

in antibiotic days for treatment. The FMT was on average performed on day 5 after diagnosis of *C. diff* infection typically due to the time needed to prepare a specimen for transplantation. Antibiotics were halted an average of 2.5 days after transplant once symptoms resolved.

**Conclusions:** Infection with *Clostridium difficile* can cause significant morbidity. Successful treatment of *C. diff* infection with fecal microbiota transplant can be achieved with the resolution of symptoms. More research is needed to explore the use of FMT to treat *C. diff* in the burn population. After successful implementation of the FMT program in the Burn Center, the hospital system has adopted our protocol for implementation for other inpatient units. Follow up study of the expanded population use is anticipated after implementation.

Infection with *Clostridium difficile* can be devastating to individuals with burns or soft tissue injury. An investigation into optimizing treatment and prevention is paramount.

**References and Resources:**

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Oake, N., Talijaard, M., Van Walraven, C., Wilson, K., Roth, V., & Forster, A. J. (2010). The effect of hospital-acquired *clostridium difficile* infection on in-hospital mortality. *Archives of Internal Medicine*. 170(20): 1804-1810.

Butler, M., Olsen, A., Drekonja, D., Shaukat, A., Schwehr, N., Shippe, N., Wilt, T.J. (2016). Early diagnosis, prevention and treatment to *Clostridium difficile*: Update. Comparative Effectiveness Review No. 172. (Prepared by the Minnesota Evidence-based Practice Center under contract No. 290-2012-00016-I). AHRQ Publication No. 16-EHC012-EF. Rockville, MD: Agency for Healthcare Research and Quality; March 2016.

**Disclosure:**

Jennifer Kesey – No Relevant Financial Relationships to Disclose  
John Griswold – No Relevant Financial Relationships to Disclose