



Diagnosis and Management of *Clostridium difficile* Infection by Pediatric Infectious Diseases Physicians

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Background

- The incidence of *C. difficile* infection (CDI) has increased among pediatric patients; however, optimal management of CDI within a diverse pediatric population remains unclear.
- Although adult guidelines recommend oral vancomycin for treatment of a second recurrence or severe CDI, dedicated pediatric data to support pediatric specific management guidelines are lacking.

Objectives

- To describe current CDI management practices by pediatric infectious diseases (ID) physicians.

Methods

- Web-based survey of 285 pediatric members of the Emerging Infections Network (EIN) from September 26, 2012-October 25, 2012
- EIN represents a network of ID physicians across North America
 - Membership drawn from IDSA and PIDS
 - Pediatric membership represents ~1/4 of all board-certified pediatric ID physicians
- Development of Survey:
 - 10-item survey adapted from recent EIN survey of adult ID physicians on management of recurrent CDI
 - New survey items developed with input from individuals with content expertise in diagnosis and management of pediatric CDI
 - Survey was pilot-tested among convenience sample of pediatric ID physicians and modified according to their feedback
- Description of Survey:
 - Participants responded to questions regarding diagnostic testing methods and treatment strategies for recurrent or severe CDI
 - Clinical vignettes used to determine how management approaches modified based on: clinical presentation, presence of underlying conditions, and patient age.

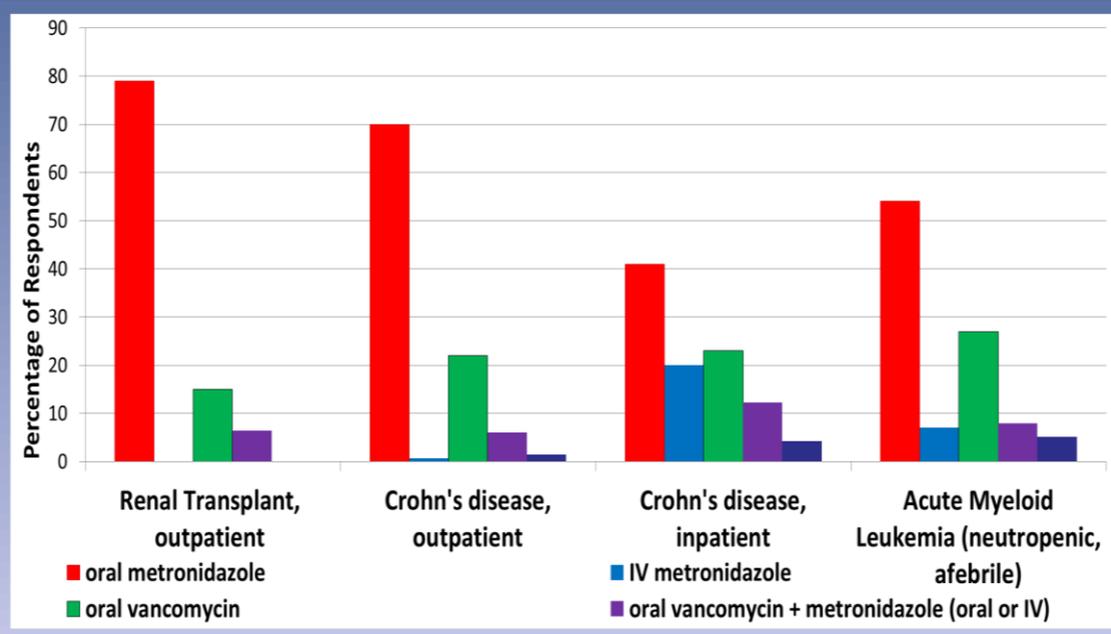
Results

- Of 285 physicians surveyed, 167 (59%) responded from 105 different institutions
- Diagnostic Testing**
 - Nucleic acid amplification assays were used alone or in combination by 97 (67%) of respondents
 - Toxin EIA was used by 32 (22%) of respondents, of whom 1/3 used toxin EIA alone
 - ~67% of respondents reported no restrictions on *C. difficile* testing by patient age
- Management**
 - All respondents (100%) used oral metronidazole for initial occurrence of mild CDI in normal host
 - Management of mild CDI varied for patients with underlying co-morbidities (Figure 1)
 - Majority (65%) of respondents preferred oral vancomycin alone or in combination for severe CDI
 - Over 30% preferred metronidazole alone
 - Management of recurrences (third or more) varied substantially
 - Use of alternative therapies was not uncommon
 - 23 (18%) reported recommending fecal microbiota transplantation
 - 20 (16%) reported ever using fidaxomicin

Table 1: Therapeutic Preference for Management of Severe *C. difficile* Infection

Choice of Therapy	Number of Respondents (%)
Oral vancomycin	40 (28%)
Oral vancomycin + metronidazole (oral or IV)	49 (34%)
Metronidazole (oral or IV)	45 (31%)
Oral vancomycin + two agents	4 (3%)
IV metronidazole + second agent (not oral vancomycin)	5 (3%)
Fidaxomicin	1 (0.7%)

Figure 1: Management of Initial, Mild *C. difficile* Infection by Patient Type



Conclusions

- Pediatric ID physicians prefer metronidazole for treatment of mild CDI in healthy children, but management strategies vary for patients with co-morbidities or recurrent or severe disease.
- Pediatric comparative effectiveness studies aimed at determining the optimal treatment for pediatric CDI are needed.

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