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

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

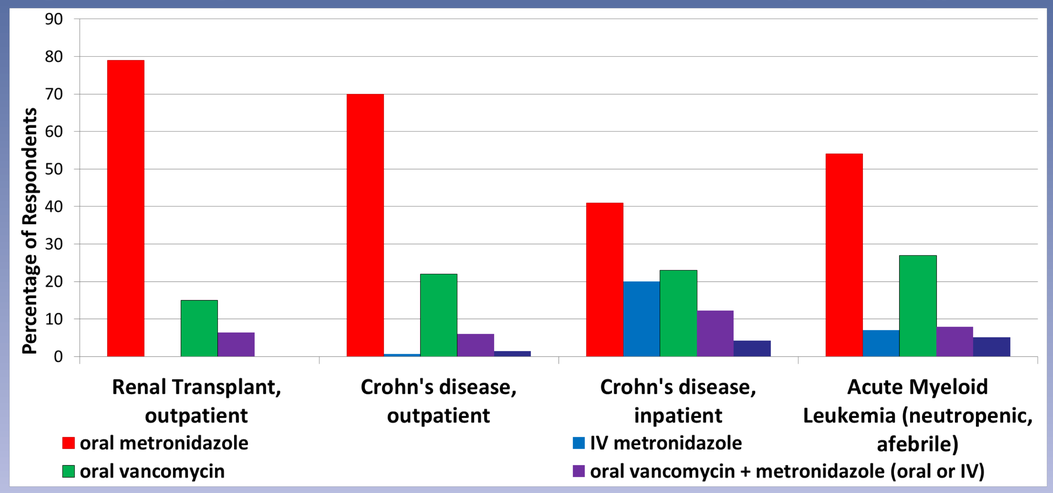

Table 1: Therapeutic Preference for Management of Severe *C. difficile* Infection

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%)

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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