Background

• The incidence of *Clostridium 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 to 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

<table>
<thead>
<tr>
<th>Choice of Therapy</th>
<th>Number of Respondents (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral vancomycin</td>
<td>40 (28%)</td>
</tr>
<tr>
<td>Oral vancomycin + metronidazole (oral or IV)</td>
<td>49 (34%)</td>
</tr>
<tr>
<td>Metronidazole (oral or IV)</td>
<td>45 (31%)</td>
</tr>
<tr>
<td>Oral vancomycin + two agents (not oral vancomycin)</td>
<td>4 (3%)</td>
</tr>
<tr>
<td>IV metronidazole + second agent</td>
<td>5 (3%)</td>
</tr>
<tr>
<td>Fidaxomicin</td>
<td>1 (0.7%)</td>
</tr>
</tbody>
</table>

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

- Renal transplant, outpatient
- Crohn’s disease, outpatient
- Crohn’s disease, inpatient
- Acute Myeloid Leukemia (neutropenic, afebrile)

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.

Research Support

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