**Editorial**

**Clostridium difficile Infection- Is it Coming at us?**

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*difficile infection (CDI) has become a global health challenge due to the recent increase in incidence and severity. Populations initially thought to be at low risk are now being identified as having severe CDI. *C. difficile* has a very fluid genome and has the potential to adapt to various circumstances, become more virulent and develop antibiotic resistance.

Studies on *C. difficile* associated diarrhoea (CDAD) in India reveal a prevalence rate ranging from 7.1-26.6% with fewer cases of fulminant infections as compared to western literature. A study as the one reported by Kaneria M et al in this issue of the journal, to evaluate the changing trends in incidence and predisposing factors of *C. difficile* in our country is definitely a step in the right direction.

Several studies have thrown light on the changing spectrum of the disease. Additional risk factors such as gastric acid suppression with proton pump inhibitors, enteral feeding, gastrointestinal surgery, cancer chemotherapy, immunosuppressants and hematopoietic stem cell transplantation among others have been shown to be strongly associated with CDAD. A recent study by Ingle et al from Mumbai in fact revealed that *C. difficile* positivity was not significantly influenced by prior antibiotic use. They found that underlying malignancy, ICU stay, chemotherapeutic agents and most importantly immunosuppressive therapy with corticosteroids were strongly associated with toxin positivity.

In a retrospective case review by Morrison et al, age > 80 yrs and prior use of acid suppressors were identified as associated with increased mortality in patients with CDI. Hence, discontinuation of acid suppressant medication should be considered after a diagnosis of *C. difficile* is made.

However, in further studies to determine novel risk factors:

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Turn around time</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Toxin detection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Cytotoxin assay</td>
<td>+++ (94-100%)</td>
<td>+++ (99%)</td>
<td>48 hrs</td>
<td>High</td>
</tr>
<tr>
<td>2. Enzyme Immunoassay (EIA)</td>
<td>+ (60-95%)</td>
<td>++ (75-100%)</td>
<td>&lt; 24 hrs</td>
<td>Low</td>
</tr>
<tr>
<td>3. PCR of stool</td>
<td>++ (93%)</td>
<td>+++(97%)</td>
<td>&lt;1 hr</td>
<td>High</td>
</tr>
<tr>
<td>B. Organism detection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Common antigen testing (GDH antigen)</td>
<td>+++ (96-100%)</td>
<td>Low</td>
<td>15-45 mins</td>
<td>Low</td>
</tr>
<tr>
<td>2. Stool culture</td>
<td>+++ (asymptomatic carriage)</td>
<td>Low</td>
<td>72 hrs</td>
<td>Labour intensive</td>
</tr>
</tbody>
</table>

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supply and frequent use of metronidazole, non adherence to complete course of antibiotics, a robust anamnestic antibody response due to repeated infections and perhaps the virulent, more toxigenic strains may not be common in our country.

The above factors might offer some insight into the remarkable differences in prevalence and severity of the disease in India as compared to other countries.

There is however hardly a place for complacency. CDIs have always been found when looked for. It is much more likely that more cases will come to light as the toxin assays and more sophisticated methods of diagnosis are used on a larger scale. CDI is an important nosocomial infection with attending morbidity, mortality and costs. Therefore infection control measures need to be emphasized. The C. difficile infection control bundle should include contact precautions, daily bleach wipes for frequently touched surfaces, terminal cleaning with bleach and hand hygiene with soap and water rather than alcohol hand rubs.

Special illumination must be provided to reveal areas that have not been cleaned. The restriction of antibiotics, especially clindamycin and 2nd and 3rd generation cephalosporins will benefit in controlling outbreaks.10

India has the dubious distinction of having many emerging infectious diseases. We only hope that CDI does not join that list.

References