Assessment of severity of *Clostridium difficile* infection

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The increasing incidence, severity and associated mortality of *Clostridium difficile* infection (CDI) continues to be a cause of health care concern. The new strain of *C difficile* (B1/NAP1/027) is associated with high levels of toxin production and more severe disease with poorer outcomes (1). Risk factors for CDI include the use of medications including antibiotics, gastric acid-suppressing agents and nonsteroidal anti-inflammatory drugs, chemotherapeutic agents, inflammatory bowel disease, post-transplantation patients, postsurgical patients, peripartum patients, prolonged length of stay in a health care setting and elderly patients (2). The Centers for Disease Control and Prevention (USA) definition of severe CDI include admission to an intensive care unit as a result of complications of CDI, surgery due to toxic megacolon, colonic perforation or refractory colitis or death attributable to CDI, all within 30 days of diagnosis (3).

Clinicians need to be able to assess the severity of CDI early in the course of the disease to tailor medical management or anticipate surgery. Several severity scores have been proposed; however, none have been rigorously validated (4). The Hines VA CDI severity score was reported to best predict severe CDI with poor outcome. This score included fever, hypotension, elevated white blood cell count and radiological findings on computed tomography scan (thickened colonic wall, colonic dilation or ascites). These factors need to be assessed soon after a positive test for *C difficile* toxin and within three days of therapy commencement. A score of 3 or more indicated severe CDI. In a recent study of 184 patients with CDI (4), the independent risk factors for severe CDI were abdominal distension, fever, leukocytosis and hypoalbuminemia (plasma albumin level less than 30 mg/L). Version 1 of The University of Pittsburgh Medical Center (USA) Index was the next best score to correlate with severe CDI, and this included abdominal pain, radiological or clinical demonstration of ileus and leukocytosis (4).

In a study from Toronto (Ontario), published in the current issue of *The Canadian Journal of Gastroenterology* (pages 368-372), Manek et al (5) reported two modifiable factors predictive of severe CDI – the use of exacerbating antibiotics and the nonuse of vancomycin in the initial therapeutic regimen. The four nonmodifiable factors identified were leukocytosis, systolic hypotension, confusion and repeat CDI. Vancomycin, therefore, should be considered first-line therapy in patients with moderate to severe CDI. It is inappropriate in these patients to wait until failure of metronidazole, given the rapid pace of the illness and early onset of complications. Early discontinuation of exacerbating antibiotics is equally important. New agents effective against CDI, such as fidoxamicin, may provide further options for treatment of severe CDI (6).

It is important to identify moderate to severe CDI early to commence treatment with vancomycin and withdraw all incriminating drugs and avoid exposure to further antibiotics. Identification of moderate to severe CDI is essentially a clinical diagnosis, but may be aided by a computed tomography scan of the abdomen. Colonoscopy or flexible sigmoidoscopy is unnecessary, although the presence of pseudomembranous colitis indicates severe CDI (Box 1). Identification of the strain B1/NAP1/027 is generally not available at an early stage to influence management decisions.

BOX 1
Indicators of moderate to severe *Clostridium difficile* infection

1. Leukocytosis (white blood cell count >20×10^9/L)
2. Plasma albumin level <30 g/L
3. Creatinine level >50% of baseline
4. Hypotension (systolic blood pressure <100 mmHg)
5. Fever (temperature >38°C)
6. Abdominal pain and distension
7. Radiological evidence of colonic dilation, ascites or ileus

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