

ABSTRACT

A cross-sectional study was conducted (April, 96 to July, 97) to investigate the prevalence of *Clostridium difficile* infection in immunocompetent and immunocompromised inpatients (197 and 113 respectively) at three health care institutions. Three hundred and ten individual faecal samples were obtained from patients at the University Hospital of the West Indies (UHWI, 154/310, 49.7%), the National Chest Hospital (NCH 117/310, 37.7%) and the Hope Institute for Cancer Patients (39/310, 12.6%). The patients were divided into subgroups and evaluated for the presence of *C. difficile* corresponding to various risk factors. Standard bacteriological procedure, tissue culture and enzyme immunoassay were used to investigate faecal specimens.

C. difficile was isolated from a total of 63/310 (20.3%) which included 13/38 tuberculous patients (34.2%), 15/78 immunocompetent cases (19.2%), 11/92 immunocompromised without immunosuppressive drugs (12%), 5/21 immunocompromised patients receiving immunosuppressive drugs (23.8%) and 19/81 paediatric patients (23.5%).

The use of antibiotics was the most common risk factor associated with *C. difficile* infection among adults (33/123, 26.8%), followed by anti-cancer agents (5/21, 23.8%). Other risk factors including intra-abdominal surgery and the use of anti-emetic agents, were less frequently associated with positive stool cultures (6/79, 7.6%).

The majority (20/22, 90.0%) of *C. difficile* isolates from adult patients at the NCH were from non-diarrhoeal stools, 68.2% (15/22) were erythromycin-resistant compared to 68.8% (11/16) of erythromycin-sensitive isolates from UHWI patients with diarrhoea.

Erythromycin-sensitive isolates showed varying zones of inhibition to clindamycin (13.8 mm to 23.2 mm), while erythromycin resistant isolates were all resistant to clindamycin (no zone).

These findings suggest that separate and specific strains of *C. difficile* were present at both hospitals, and that pathogenic strains are more likely to be erythromycin sensitive.

The general resistance of isolates to erythromycin and clindamycin among the NCH patients was typical of a serogroup C strain of *C. difficile*. This pattern of resistance could be a useful epidemiological tool to distinguish this strain from other serogroups by disc diffusion.

The carriage of *C. difficile* among three groups of paediatric patients (23.5%, 19/81.) at the UHWI was of no clinical diagnostic value. Isolates from children showed a similar prevalence of erythromycin sensitivity to isolates from adult patients at the UHWI, but were not associated with diarrhoea.