B.J.A. Rijnders
E. Van Wijngaerden
C. Verwaest
W. E. Peetermans

Saccharomyces fungemia complicating *Saccharomyces boulardii* treatment in a non-immunocompromised host

Accepted 29 March 2000

Sir: *Saccharomyces boulardii* (SB) is used for the prevention and treatment of *Clostridium difficile*-related diarrhoea and in one study it was given successfully for the prevention of enteral feeding-associated diarrhoea in the ICU [1]. There are conflicting, but mostly positive, results about the efficacy of SB for the prevention of antibiotic-associated diarrhoea. Treatment with SB is generally thought to be safe as it only colonises mucosal surfaces. We report the case of a patient who developed fungemia with *Saccharomyces cerevisiae* (SC) during treatment with SB for enteral feeding-associated diarrhoea.

A 74-year-old male patient was hospitalised with hemiplegia due to a subarachnoidal haematoma and underwent neurosurgery. During his stay in the ICU he received enteral nutrition through a nasogastric tube. Major diarrhoea developed (5–10 liquid stools a day), repeated testing for *Clostridium difficile* and other enteropathogens was negative. The problem persisted after enteral nutrition was stopped and treatment with SB (Perenterol, Biodiphar, Brussels) was started at two capsules (50 mg each) 6 times a day. After several days of treatment he developed sepsis with *Klebsiella oxytoca* and SC (2 of 3 aerobe blood culture bottles were positive). Catheter-tip culture of the only (intravenous) catheter the patient had remained sterile. Antibiotic treatment and fluconazole 200 mg i. v. b. i. d. were started. On clinical examination the patient had a severely distended abdomen. A sigmoidoscopy showed severe inflammation of the mucosal surface without pseudomembranes and pathological findings were unrevealing (aspecific inflammation). Subsequent blood cultures remained negative. The patient died 4 weeks later. Autopsy showed diffuse mucosal inflammation of the colon and a perforation of the sigmoid with faecal peritonitis. Biopsies of the colonic mucosa revealed multiple ulcerations, some of them causing perforation. The aetiology of the colitis remained uncertain. Yeast infection could not be demonstrated at necropsy.

To the best of our knowledge, this is the second report of SC fungemia in a non-immunocompromised host receiving SB treatment for diarrhoea [2]. We think the fungemia was caused by translocation through the intestinal wall because this patient had macroscopic and microscopic colitis as an obvious portal of entry. We were unable to show with certainty that the strain of the patient was the same as the one administered, because the blood cultures were no longer available for genotypic differentiation.

In most cases of SB fungemia in ICU, intravascular catheters were considered the probable portal of entry. Transmission via hands that were contaminated while manipulating *Saccharomyces* capsules for administration via nasogastric tubes (and subsequent contamination of the catheter) was the likely explanation. Transmural migration of *Saccharomyces* in critically ill patients, however, remains a concern. This case illustrates that there should be concern about the safety of SB in patients with active colitis although it is uncertain if the patient's death was related to the fungemia. Colonic ulceration might predispose to translocation of SB through the intestinal wall even in the non-immunocompromised host. It has to be mentioned that although our patient was, generally speaking, non-immunocompromised, a critically ill patient can probably be considered to be immunocompromised [3].

References

1. Bleichner G, Bléhaut H, Mentec H, Moyse D (1997) Saccharomyces boulardii prevents diarrhea in critically ill tube-fed patients. A multicenter, randomized, double-blind placebo-controlled trial. Intensive Care Med 23: 517–523
2. Pletincx M, Legein J, Vandenplas Y (1995) Fungemia with Saccharomyces boulardii in a 1-year-old girl with protracted diarrhea. J Pediatr Gastroenterol Nutr 21(1): 113–115
3. McRitchie DI, Girotti MJ, Rotstein OD, Teodorczyk-Injeyan JA (1990) Impaired antibody production in blunt trauma. Possible role for T cell dysfunction. Arch Surg 125: 91–96

B. Rijnders (✉) · E. Van Wijngaerden · C. Verwaest · W. E. Peetermans
Interne Geneeskunde,
University Hospitals Leuven, Herestraat 49, 3000 Leuven, Belgium
e-mail: bart.rijnders@uz.kuleuven.ac.be
Fax: + 32-16-33 73 40