Determinants of catheter loss following continuous ambulatory peritoneal dialysis peritonitis

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摘要

Abstract

BACKGROUND: Few patients are able to resume peritoneal dialysis (PD) therapy after an episode of peritonitis that requires catheter removal. PD catheter loss is therefore regarded as an important index of patient morbidity. The aim of the present study was to evaluate factors influencing catheter loss in patients suffering from continuous ambulatory PD (CAPD) peritonitis. Patients and METHODS: We retrospectively reviewed 579 episodes of CAPD peritonitis from 1999 to 2006 in a tertiary-care referral hospital. Demographic, biochemical, and microbiological characteristics were recorded. Episodes resulting in PD catheter removal (n = 68; 12%) were compared by both univariate and multivariate analyses with those in which PD catheters were preserved. RESULTS: The incidence of PD catheter loss increased as the number of organisms cultured increased (p = 0.001). Also, PD catheter removal was more likely to occur after peritonitis episodes with low serum albumin level (p = 0.004), those with long duration of PD effluent leukocyte count remaining above 100/microL (p < 0.001), those with concomitant tunnel infection (p < 0.001), those with concomitant exit-site infection (p = 0.005), and those with presence of catastrophic intra-abdominal visceral events (p < 0.001). Duration on PD preceding the peritonitis episode was of borderline significance (p = 0.080). On the contrary, initial PD effluent leukocyte count and serum level of C-reactive protein were not predictive of PD catheter loss. Micro-organisms of the Enterobacteriaceae family were the major pathogens responsible for PD catheter loss following polymicrobial peritonitis. Furthermore, we found that there was no association between polymicrobial peritonitis and the catastrophic intra-abdominal visceral event, although both resulted in a greater incidence of PD catheter loss. Among the single-organism group in our population, the microbiological determinants of PD catheter loss included fungi (p < 0.001), anaerobes (p = 0.018), and Pseudomonas sp (borderline significance: p = 0.095). CONCLUSION: PD catheter loss as a consequence of peritonitis is related primarily to hypoalbuminemia, longer duration of PD effluent leukocyte count remaining above 100/muL, the etiologic source of the infection, and the organism causing the infection. Peritonitis associated with concomitant tunnel or exit-site infections and abdominal catastrophes were more likely to proceed to PD catheter loss. The microbiological determinants of PD catheter loss in the present study included polymicrobial infections caused by Enterobacteriaceae as well as monomicrobial pseudomonal, anaerobic, and fungal infections..