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The impact of cognitive impairment on peritonitis rate in patients on peritoneal dialysis

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Introduction

Peritonitis remains the most common and major complication in the treatment modality of peritoneal dialysis (PD) for end-stage renal failure (ESRF). The number of elderly patients treated with long-term PD is increasing worldwide. Cognitive impairment is not uncommon in ESRF patients especially the elderly and contributes to poor outcome.

Objectives

Impact of cognitive impairment in ESRF patients newly started on peritoneal dialysis (PD) focusing on PD related peritonitis.

Methodology

All patients newly started on PD, except those assisted by helper, between February 2011 and March 2013 were recruited. Mini-Mental State Examination (MMSE) was performed independently to assess cognitive impairment, using education-adjusted cut-offs, before PD training. Data on patient characteristics including demographics, co-morbidities, blood biochemistry, dialysis adequacy, medications and PD peritonitis were collected.

Result

92 consecutive patients (age 59 ± 14.8 years, 47.8% female) from two dialysis centers were recruited. MMSE score was 27 ± 3.6 . 12% of patients were cognitively impaired. Age (OR 1.12, $p=0.031$) and female gender (OR 6.34, $p=0.036$) were independent risk factors for cognitive impairments in logistic regression analysis. Patients with cognitive impairment showed a higher rate of peritonitis compared with those without cognitive impairment (1 episode per 8 patient-months vs. 1 episode per 24.4

patient-months respectively, $p=0.021$). In multivariate analysis, cognitive impairment was the only significant predictor for peritonitis (OR 4.36, 95% CI 1.16-16.43, $p=0.03$). Our results show that cognitive impairment is common in incident PD patients. This may be clinically unrecognized but is an important risk factor for PD peritonitis. Proactive screening for cognitive impairment in elderly PD patients may help prevent PD related peritonitis.