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Theme : PD in Diabetics or Geriatric Patients

New Onset Hyperglycemia in Non-Diabetic Patients Started on Peritoneal Dialysis

Szeto, C.C.¹, Chow, K.M.², Leung, C.B.², Kwan, B.C.H.², Chung, K.Y.², Law, M.C.², Li, P.K.T.²; The Chinese University of Hong Kong¹, Prince of Wales Hospital², Shatin, Hong Kong

Background Glucose has been used as the osmotic agent added to standard peritoneal dialysis (PD) solution since its inception. Patients who have no history of glucose intolerance may develop hyperglycemia following the initiation of PD. However, the prevalence and long term implication of new-onset hyperglycemia in PD patients has not been studied. Methods We study 405 consecutive renal failure patients newly started on PD. Their fasting plasma glucose one month after stable on PD is reviewed. Clinical factors affecting fasting plasma glucose are explored. Patients were followed for 49.7 +/- 28.4 months. Results Of the 405 patients, 136 had underlying diabetic nephropathy; another 17 had pre-existing diabetes before started on PD. Of the remaining 252 patients, fasting plasma glucose was above 11.1 mmol/l in 21 (8.3%), and between 7.0 to 11.0 mmol/l in another 38 (15.6%) patients. Seven patients required insulin therapy, 3 required low dose sulfonylurea; all other patients were controlled by dietary restriction only. As compared to patients with normal blood glucose, patients with new onset hyperglycemia were older (59.4 +/- 12.8 vs 51.2 +/- 14.8 years, $p < 0.001$) and slightly more likely to be hepatitis B carrier (9 of 59 vs 14 of 192 patients, $p = 0.07$). However, patients with new onset hyperglycemia had similar body weight, body mass index, Charlson's comorbidity score, peritoneal transport parameters and ultrafiltration profile as compared to other patients. At 36 months, the actuarial survival rate of patients with fasting glucose < 5.6 , 5.6 to < 7.0 , 7.0 to < 11.1 , and ± 11.1 mmol/l were 93.7%, 85.3%, 81.6% and 66.7% respectively ($p = 0.15$). Conclusion New onset hyperglycemia is common in non-diabetic patients started on PD. Contrary to common belief, obese patients does not appear to have a higher risk of hyperglycemia. Although not statistically significant, our result does suggest that new onset hyperglycemia is associated with worse survival in PD patients.