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Evaluation on self-adjusted phosphate binder dose to dietary phosphate content in the management of hyperphosphatemia among hemodialysis patients in Penang, Malaysia**Khor Su Mee**

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Hyperphosphatemia is a serious and pervasive problem which will lead to secondary hyperparathyroidism, renal osteodystrophy and vascular calcification among dialysis patients. Therefore, prevention and correction of hyperphosphatemia has become major goal of treatment for these patients. Generally, poor adherence to phosphate binder prescription and poor dietary phosphate control are the main factors that cause failure in achieving the target phosphate level. Nowadays, there are more and more convenient foods which are very accessible, tasty, and cheaper than fresh and unprocessed healthy food. These foods content phosphate additive resulted 2-3 fold increase of dietary phosphate intake. Studies showed that 90% of the phosphorus additive is believed to be absorbed in the intestinal tract, as opposed to only 40-60% of intestinal phosphorus absorption in animal protein and 10-30% in vegetarian protein. Thus, the aim of this study is to create a friendly self-adjust PB tool (SPT) for better controlling the phosphate level among these dialysis patients. The Phosphate Unit (PU) to meal phosphorus content (considering the intestinal phosphorus absorption of inorganic phosphate additive and the organic phosphorus in natural food) was developed from the common eaten foods by the dialysis patients in Penang state. This intervention, random control trial study was carried out from September 2015 to September 2016. A total of 108 hemodialysis patients with phosphate level more than 1.8 mmol/L were recruited from 8 hemodialysis centers in Penang state. They were divided into 2 groups. The standard group underwent standard diet counseling while the intervention group underwent a counseling using the SPT. For data analysis, the ANOVA was used to compare the differences of phosphate level between the intervention and standard group at baseline, 1 month, 3 months and 6 months follow-up. Studies showed that there was a significant difference between these 2 groups, $p < 0.05$. As conclusion, self-adjust PB to dietary phosphate content may increase the adherence of phosphate binder among hemodialysis patients. This concept for managing hyperphosphatemia can avoid excessive phosphorus loads and keep the number of phosphate binder pills to a tolerable limit.

Biography

Khor Su Mee is currently pursuing PhD in Clinical Pharmacy at University Science Malaysia. She has completed her Master of Science in Clinical Pharmacy in the year 2012 and Degree of Dietetic in 2002. She is a Clinical Dietitian from the Malaysia's Government Hospital since 2002. She is also a Clinical Instructor for Dietetic students from many local and private universities like University Kebangsaan Malaysia, University Putra Malaysia, Uitm, International Medical University and University Sciences Malaysia. She has published papers in journals and was awarded for best Free Oral Paper at Malaysian Dietitian's Association Conference in 2012.

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