

## Do visual aids and “shock tactics” improve understanding of the clinical consequences of hyperphosphataemia and increase motivation to manage phosphate levels in haemodialysis patients

Miss Rachel Davies<sup>1</sup>, Miss Lucy Garnier<sup>1</sup>

<sup>1</sup>*Guy's And St Thomas' NHS Foundation Trust, London , United Kingdom*

**Introduction:** Chronic Kidney Disease - Mineral and Bone Disorder (CKD-MBD) describes abnormalities related to bone metabolism and vascular calcification caused by changes in calcium, phosphorus, parathyroid hormone (PTH) and vitamin D levels. Studies have shown a strong association between elevated phosphate and calcium levels and mortality in dialysis patients<sup>1</sup>. It has been observed that the general understanding of the clinical consequences of elevated phosphate levels is fairly poor in our dialysis population which results in multiple follow-ups to re-inforce the information. Shock tactics and visual aids have been used in public health promotion campaigns in recent years but these have shown questionable effectiveness<sup>2</sup>. This intervention aims to provide a new education tool in the management of hyperphosphataemia to improve patients' understanding and motivation in the self-management of hyperphosphataemia such as taking phosphate binders and following a low phosphate diet.

**Methods:** The intervention used visual aids and “shock tactics” to provide education on the clinical consequences of hyperphosphataemia. It was delivered at one haemodialysis unit between July and August 2019. A questionnaire was completed by 24 patients with assistance from the dietitian, pre and post the intervention. It included a mix of qualitative and quantitative questions that evaluated patients' perceived knowledge, patient's actual knowledge and patients' reported phosphate binder adherence. A follow-up questionnaire was completed 1-2 months following the intervention evaluating the same parameters as well as patients' views on the intervention. The results were analysed by evaluating patients' knowledge, determining the average of the scaled questions, and calculating percentages where relevant.

**Results:** Patients' perceived knowledge of the clinical consequences of hyperphosphataemia was a mean of 3.3 and 6.2 (out of 10, with 10 indicating greatest understanding) pre and post intervention respectively. Patients' actual knowledge of clinical consequences of hyperphosphataemia also improved in 67% of patients. The number of patients following a low phosphate diet increased from 17% to 88% after the intervention. The level of non-adherence to phosphate binders on a daily or weekly basis decreased from 42% to 21% after the intervention. Additionally, 100% of patients reported that they found the pictures helped their understanding of the consequences of hyperphosphataemia. 93% of participants on binders reported that the pictures motivated them to take their binders more often, and 92% reported that the pictures motivated them to follow a low phosphate diet.

**Conclusion:** Shock tactics and visual aids are a useful tool for improving patients' understanding around the clinical consequences of hyperphosphataemia, as well as improving motivation and reported adherence to follow a low phosphate diet and take phosphate binders where prescribed.