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Patient-Centered Contributors to Phosphorus Control in a Stand-Alone Hemodialysis Center

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Phosphorus control is one of the key elements to management in dialysis patients. Increased phosphorus levels are associated with higher risk of mortality among chronic kidney disease patients; however, research indicates that it is difficult to maintain successful control of phosphorus. The primary factors contributing to control are diet and compliance with binders. We sought to determine the contributors to poor phosphorus control in a hemodialysis population using patient survey results and objective clinical information. This quality project collected survey data on adult patients receiving hemodialysis in a stand-alone hemodialysis unit. A home-grown survey based on the Morisky Scale for Medication Adherence was administered to patients by dietitians and the scale was modified to capture patient responses on forgetfulness, health literacy and side effects of medication. Patient Medication Refill Adherence Rate (MRAR) was obtained from the hospital's pharmacy database. There were 79 patients included in the analysis. Patients were stratified into controlled vs. uncontrolled phosphorus based on serum phosphorus levels with controlled phosphorus defined as serum phosphorus lying between 3.5 mg/dl to 5.5 mg/dl. Medication adherence was measured based on proportion of days covered (PDC). Based on the survey, the reasons for non-adherence that were associated with poor phosphorus control were forgetfulness (61%), health literacy (43%), and side effects (25%). Correlation analysis of MRAR with phosphorus levels showed a correlation ($r=-0.03$, $p=0.8$) after adjusting for age, gender, race, bmi and diabetes status. Correlation analysis of forgetfulness score ($r=0.2$, $p=0.09$), side effect score ($r=0.2$, $p=0.09$) and health literacy score ($r=0.07$, $p=0.5$) with phosphorus levels showed a positive correlation after adjusting for the same factors. With the help of our findings, we are in the process of implementing strategies that emphasize medication adherence and lifestyle changes among our dialysis patients.

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