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Chronic Kidney Disease Patients' Acceptance and Adherence to Oral Sodium Bicarbonate - a Malaysian Experience

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Objectives : Oral sodium bicarbonate has been advocated as treatment for metabolic acidosis in chronic kidney disease (CKD). In Malaysian Ministry of Health hospitals, only sodium bicarbonate solution is listed in the national drug formulary whereas tablets require special permission prior to use. This study aims to provide data and compare the acceptance of sodium bicarbonate solution versus tablet for metabolic acidosis treatment among the Malaysian CKD population.
Methods : This prospective multi-centered, cross-sectional study conducted in five government hospitals was carried out via convenience sampling from May to November 2023, involving pre-dialysis adult CKD patients. All patients completed a researcher-assisted questionnaire which included demographics, clinical characteristics, treatment history, 5-domain Medication Acceptance Questionnaire (MAQ) evaluating convenience, taste, appearance, efficacy and tolerability; and individual adherence assessment.
Results : Among the 203 patients included in the analysis, the median age was 60 years (interquartile range [IQR], 16 years), majority were Stage 5 CKD (n=138, 68.0%) and the median estimated glomerular filtration rate was 10.9 ml/min/1.73m^2 (IQR, 10.7 ml/min/1.73m^2). While most patients were using solution (n=158, 77.8%), their acceptance score above 70% was only for three MAQ domains whilst those on tablets had acceptance score above 70% for all five MAQ domains. Those using tablets were more adherent to treatment (88.9% versus 70.9%, $p<0.014$) and had higher global formulation acceptance [median global acceptability visual analogue scale (VAS) for tablets: 10 (IQR 2) versus solution: 8 (IQR 3), $p<0.001$]. There was a significantly positive but low correlation between the self-reported individual adherence score and the global formulation acceptability VAS ($r_s=0.348$, $p<0.001$).
Conclusions : Our study showed that sodium bicarbonate solution has poor patient acceptance and changing to tablets may improve patient acceptability, adherence and clinical outcome. Future studies should explore the budget impact of these two formulations which may assist policymakers to consider including tablets in the national drug formulary.