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Metabolic acidosis status and mortality in patients on the end stage of renal disease

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Introduction-Aim: Uncorrected metabolic acidosis leads to higher death risk in dialysis patients. We observed the relationship between metabolic acidosis status and mortality rate in patients on renal replacement therapy during a median follow up time of 60 months.

Methods: We studied 76 patients on on-line hemodiafiltration. Dialysis adequacy was defined by Kt/V for urea. Framingham risk score (FRS) points were used to determine the 10-year risk for coronary heart disease. We examined the impact of high or low serum bicarbonate concentrations on mortality rate and on 10-year risk for coronary heart disease via the Kaplan-Meier method. Cox's model was used to evaluate a combination of prognostic variables, such as dialysis adequacy defined by Kt/V for urea, age and serum bicarbonate concentrations.

Results: We divided the enrolled patients in 3 groups according to serum bicarbonate concentrations (<20 mmol/L, 20-22 mmol/L and >22 mmol/L). Kaplan-Meier survival curve for the impact of serum bicarbonate concentrations on overall mortality was found significant (log-rank=7.8, p=0.02). The prevalence of serum bicarbonate less or more than 20 mmol/L on high FRS (>20%) by Kaplan-Meier curve was also found significant (log-rank=4.9, p=0.02). Cox's model revealed significant predictive effect of serum bicarbonate on overall mortality (p=0.006, OR=1.5, 95% CI=1.12-1.98) in combination to Kt/V for urea and age.

Conclusion: Uncorrected severe metabolic acidosis, defined by serum bicarbonate concentrations less than 20 mmol/L, is associated with 10-year risk for coronary heart disease more than 20% and high overall mortality in patients on renal replacement therapy.

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Primary squamous cell carcinoma of kidney associated with large calculus in non-functioning kidney: A case report

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Primary squamous cell carcinoma (SCC) of renal pelvis is a rare neoplasm, accounting for 0.5-0.8% of malignant renal neoplasm. Risk factors are renal calculi, infection, endogenous and exogenous chemicals, hormonal imbalance, radiotherapy and vitamin A deficiency. SCC of urinary tract is more frequently reported in urinary bladder and male urethara. We report a case of SCC of left renal pelvis associated with long standing large calculus in a 75-years old male who presented with history of chronic dull aching pain in left flank region for last 10 years and has a past history of left pyelolithotomy about 30 years back and no history of hematuria, significant weight loss or fever. General physical examination was unremarkable. All routine blood investigations were normal except serum creatinine (2 mg/dl). NCCT of KUB region was suggestive of large 3.6 cm calculus in left renal pelvis along with large heterogeneous density lesion involving mid and lower pole of the kidney with perinephric fat stranding. DTPA scan was suggestive of left nonfunctioning kidney (GFR-9 mL/min/1.73 m²). He underwent left radical nephrectomy. Histopathological examination of the specimen revealed features of squamous cell carcinoma of renal pelvis with extensive involvement of renal parenchyma. Patient was discharged on day seven and kept on follow up. The patient remained disease free for three months post surgery and was lost to follow up then. So, any patient presenting with long history of renal calculus with solid component in non-functioning kidney, possibility of SCC should always be kept in mind and manage accordingly.

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