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INTRODUCTION:

Renal Tubular Acidosis (RTA) is a condition when the kidneys are unable to maintain normal acid-base homeostasis. With tubular defect in acid excretion or bicarbonate ion reabsorption¹. Distal renal tubular acidosis (dRTA) is a type 1 from 3 type of major forms of RTA. dRTA is rare but serious type of kidney disease. It's characterized by electrolyte imbalance includes of metabolic acidosis with non-gap anion gap with severe symptomatic hypokalemia^{1,2}

We report a case of 36 years old malay lady with underlying dRTA with history of multiple admission for symptomatic hypokalemia. She presented with worsening generalized body weakness (limb paralysis), unable to walk and persistent vomiting. Subsequently she developed respiratory arrest and was intubated. Physical examination was unremarkable. Laboratory test showed severe hypokalemia at 1.4 mmol/L, non-anion metabolic acidosis (NAGMA) with PH: 7.17, PCO₂: 28 mmHg, PO₂: 93 mmHg, HCO₃ of 10 mmol/l, Na: 127 mmol/L, Cl:106 mmol/L, Po₄:0.9 mmol/L, Mg: 1.04 mmol/L, calcium: 2.15 mmol/L, creatinine: 98 umol/L, Urea 4.0 mmol/L. ECG showed generalized ST depression, prominent U wave and prolong QTc. She was given total potassium correction 11g, MgSO₄, Shohl solution, NaHCO₃ and spironolactone. Hemodialysis was done in ICU and improved clinically. She able to

wean and discharge with medication and follow up.

DISCUSSION:

Managing severe symptomatic hypokalemia in acute setting was very challenging. It requires fast decision making and multidisciplinary approach. Above case show us how rapidly patient deteriorate with respiratory paralysis and need large amount of potassium correction including hemodialysis. Symptomatic persistence hypokalemia is a condition where need rapid replenishment of potassium stores and at the same time to continuously monitor cardiac activity for any complication of over correction³. Magnesium sulphate was given to stabilize membrane potential and decreasing cell excitability that can aggravate the adverse effects of hypokalemia on target tissues⁴. Sodium bicarbonate also been given to tackle acidosis state prior to haemodialysis^{1,2}. Shohl solution and spironolactone was started as potassium supplement and potassium-sparing agent².

CONCLUSION:

Severe symptomatic hypokalemia is a life-threatening electrolyte disturbance and is a medical emergency. Symptoms of quadriplegic paralysis until respiratory paralysis is a life-threatening symptom derived from severe hypokalemia. In presence of dRTA disease, it should be managed multidiscipline approach involving emergency physician, intensivist, nephrology, and endocrinology. The aim for treatment is to reduce of potassium losses, replenishment of potassium stores, evaluation for potential toxicities of treatment and determination of the cause³.

KEYWORD: Hypokalemia, Distal Renal Tubular Acidosis