PROXIMAL (TYPE 2) RENAL TUBULAR ACIDOSIS

visualnephron

PATHOPHYSIOLOGY:

Decreased reabsorption of HCO_3^- by the proximal tubule, either in isolation (eg. carbonic anhydrase inhibitors) or as part of global proximal tubule dysfunction (eg. Fanconi Syndrome).

RESULT:

Urinary HCO_3^- losses result in metabolic acidosis. Hypokalemia also develops due to negatively charged HCO_3^- ions attracting positively charged K^+ ions into the urine. Distal nephron ability to acidify urine acidification remains intact so urine pH can still be maximally acidic (ie. pH <5.5).

	Type 2 RTA	Type 1 RTA	Type 4 RTA
HCO_3^-	↓	↓	↓
Urine pH	<5.5	>5.5	Usually <5.5
Serum K	↓	↓	↑

HCO_3^- = bicarbonate; K^+ = potassium