Quiz

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QUESTION 2

- A 70-year-old man with long-standing type 2 diabetes and stage 3b CKD develops persistent hyperkalemia (K^+ 6.1 mEq/L) with HCO_3^- 17 mEq/L. Urinary pH is 5.0, urine anion gap is positive, and plasma renin activity and aldosterone are both low. He has been taking **losartan**, **NSAIDs**, and **metformin**.

2. Which of the following best explains the mechanism by which his medications have exacerbated the underlying Type 4 RTA?

A. Losartan reduces distal Na^+ delivery by increasing proximal tubular reabsorption

B. NSAIDs cause distal tubular H^+-ATPase dysfunction similar to Type 1 RTA

C. Metformin directly inhibits aldosterone biosynthesis in the adrenal cortex

D. Losartan increases ENaC activity, leading to enhanced K^+ retention

E. NSAIDs inhibit renin release by blocking prostaglandin-mediated stimulation of juxtaglomerular cells

Ans: C

- NSAIDs inhibit renin release by blocking prostaglandin-mediated JG stimulation → ↓ renin, ↓ aldosterone → worsens hyporeninemic hypoaldosteronism.
- Losartan reduces distal Na^+ delivery – Incorrect; main effect is ↓ aldosterone, not proximal Na^+ handling. it decreases ENaC via aldosterone suppression
- Metformin inhibits aldosterone biosynthesis – Incorrect; causes lactic acidosis, unrelated to RAAS.
- NSAIDs cause distal H^+-ATPase dysfunction – Incorrect; that produces Type 1 RTA with hypokalemia, not Type 4.

Winner

- Dr Anju Sukumaran
- Final year Drnb Resident
- Cosmopolitan hospitals
- Trivandrum

Congratulations


THANK YOU