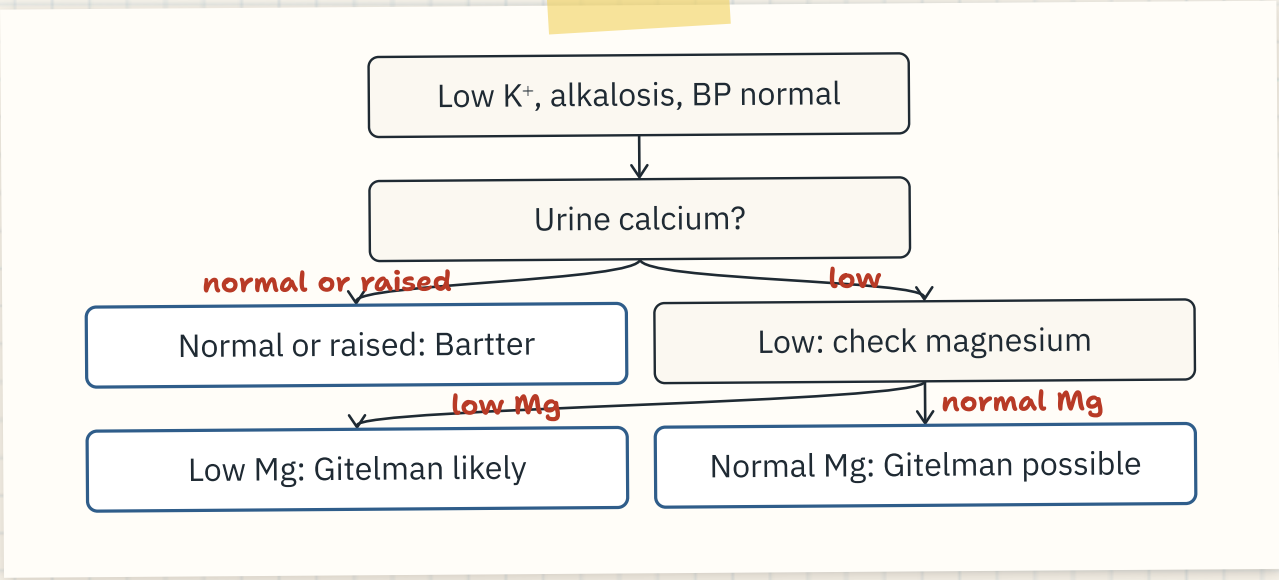
Bartter vs Gitelman

Two transporters, one alkalosis, opposite urine calcium



Step by step

1. Salt and volume lost
2. Renin and aldosterone up
3. K^+ and H^+ lost in collecting duct
4. New HCO_3^-: alkalosis generated
5. Volume depletion and low K^+ maintain it

	Bartter (loop-like)	Gitelman (thiazide-like)
Defect	NKCC2 / ROMK	NCC
Site	Thick ascending limb	Distal convoluted tubule
Urine Ca	Normal or raised	Low
Magnesium	Normal or low	Low
BP	Normal or low	Normal or low
Urine Cl^-	Above 20	Above 20

Loop-type vs thiazide-type

Rule of thumb

Loop: lose calcium. Thiazide: save calcium.

Gitelman also lowers magnesium.

Exam traps

- High blood pressure points away from Bartter and Gitelman (adenoma, Liddle).
- Distal RTA gives acidosis, not alkalosis.
- Check expected $PaCO_2 = 40 + 0.7 \times (HCO_3^- - 24)$ to confirm a single disorder.

Bartter vs Gitelman: NKCC2, NCC and urine calcium

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/renal-acid-base/bartter-vs-gitelman

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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