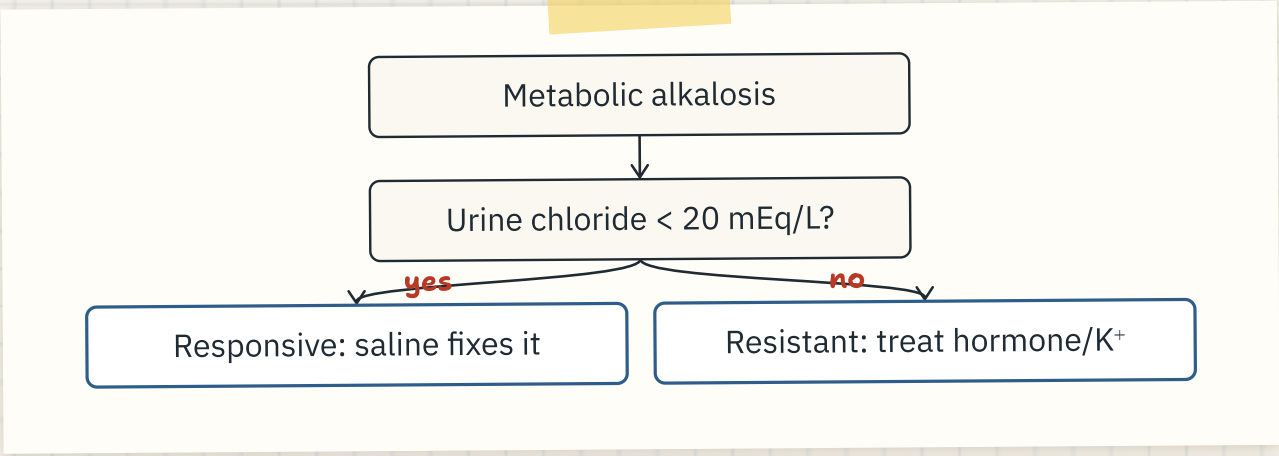
Metabolic alkalosis

Generation, maintenance and urine chloride



Step by step

1. Generation: alkali gain, or acid lost from the stomach or kidney
2. Maintenance: the kidney holds on to bicarbonate
3. Maintainers: volume, Cl^-, K^+ depletion, low GFR, aldosterone
4. Measure urine Cl^- (cut-off about 20 mEq/L)

	Urine Cl^- below ~20	Urine Cl^- above ~20
Type	Chloride-responsive	Chloride-resistant
Volume	Depleted	Often expanded
Causes	Vomiting; past diuretics	Aldosterone excess; severe K^+ deficit; Bartter; current diuretic
Saline	Fixes it	Does little

Urine chloride splits the maintainers

Rule of thumb

Generation adds it; maintenance makes it last

Low urine Cl^-: saline fixes it

High urine Cl^-: treat the hormone or the potassium

Exam traps

- The generating event and the maintainer are often different things.
- Some sources use below 10 as the sure sign of volume depletion: 10–20 is a grey zone.
- A current diuretic can give a high urine Cl^-: read it with the drug history.
- In stage 4–5 kidney disease these urine values are not diagnostic.

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