⬜ Vaptan

Definition: Vaptans are a class of drugs that act as vasopressin receptor antagonists, specifically targeting arginine vasopressin (AVP) receptors (also known as antidiuretic hormone receptors). Their main clinical use is to treat hyponatraemia due to inappropriate water retention.

Main agents:

Tolvaptan → selective V2 receptor antagonist (renal collecting duct)

Conivaptan → dual V1A and V2 antagonist (approved IV use in USA)

Mechanism of action:

Block the V2 receptors in the renal collecting ducts, inhibiting water reabsorption.

Induce aquaresis: excretion of free water without significant electrolyte loss.

Result: ↑ serum sodium without causing volume overload.

Indications:

Euvolemic hyponatraemia (e.g., SIADH)

Hypervolemic hyponatraemia (e.g., heart failure, cirrhosis) (Note: use in liver disease requires caution due to hepatotoxicity risk)

Contraindications:

Hypovolaemic hyponatraemia

Anuria

Inability to sense or respond to thirst

Warnings:

Risk of overcorrection of sodium → osmotic demyelination syndrome

Requires close serum Na$^+$ monitoring (especially in first 24–48 h)

⬜ Clinical tip: Vaptans treat water intoxication, not sodium deficiency.

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Last update: **2025/06/16 16:31**