BEST PRACTICES

ASSESSMENT OF HYPONATREMIA

FOUR CRITICAL QUESTIONS

01 IS IT REAL HYPONATREMIA?

Check serum osmolality

Normal or High

HYPERTONIC OR ISOTONIC HYPONATREMIA
Hyperglycemia
Absorption of irrigation solution: sorbitol or glycine
Intravenous mannitol
Intravenous immune globulins

MISLEADING
Uremia
ETOH intoxication

PSUDOHYPONATREMIA
Hyperlipidemia
Hyperproteinemia

Low: <280 mOsm/kg

02 IS WATER EXCRETION APPROPRIATE?

Check urine osmolality

Low: <100 mOsm/kg

SELF-INDUCED WATER INTOXICATION
Psychogenic polydipsia
Ecstasy use
Endurance event (marathone)

HIGH FLUID, LOW PROTEIN DIET
Beer potomania
Tea and toast diet

High: >100 mOsm/kg

03 IS ADH SECRETION APPROPRIATE?

Check volume status

Hypovolemia
Appropriate ADH Secretion

$$[Na] = \frac{\downarrow\downarrow Na}{\downarrow H_2O}$$

Euvolemia
Inappropriate ADH Secretion

$$[Na] = \frac{\leftrightarrow Na}{\uparrow\uparrow H_2O}$$

Hypervolemia
Maladaptive ADH Secretion

$$[Na] = \frac{\uparrow Na}{\uparrow\uparrow H_2O}$$

04 WHAT IS THE URINE SODIUM [U_{Na}]?

Hypovolemia		Euvolemia		Hypervolemia	
> 40 mEq/L	**< 25 mEq/L**	**> 40 mEq/L**	**< 25 mEq/L**	**> 40 mEq/L**	**< 25 mEq/L**
Renal Losses Diuretic use Primary adrenal insufficiency Bicarbonaturia: tubal acidosis, metabolic alkalosis, or Ketonuria Osmotic diuresis Cerebral salt wasting	**Exrtraenal Losses** GI losses Third-space losses	SIDAH Nephrogenic SIADH Reset osmostat Glucocorticoid deficiency Severe hypothyroidism	Serial measurement of the urine sodium and urine osmolality after infusion of isotonic saline.	Acute or chronic renal failure	Nephrotic syndrome Cirrhosis Heart failure

25-40 mEq/L: Infuse 1 liter of isotonic saline and re-measure urine sodium!

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ADH: Antidiuretic Hormone

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