**SIADH and Diabetes Insipidus**

**SIADH**

- **WATER RETENTION** due to ridiculously inappropriate ADH secretion
- **ADH** = posterior pituitary peptide hormone;
- **normally**, ADH causes water resorption at the collecting duct
- **too much ADH** = too much water is resorbed

Thus: extracellular water retention; plasma osmolality falls (bloodstream is diluted)

Thus: the proximal tubule, trying to compensate, tries to dump water by dumping sodium.

Or, rather, by no longer resorbing as much sodium.

Thus: **HYPONATREMIA** develops; though usually if there is another source of free water.

The water retention usually stops short of actual oedema

**SYMPTOMS** are usually those of hyponatremia (very non-specific constitutional symptoms)

**MANAGEMENT:** usually limited to fluid restriction; maybe consider hypertonic saline

And, of course, LOOK FOR THE CAUSE (drugs, tumour, brain injury eg. meningitis)

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**DIABETES INSIPIDUS**

**Central DI:** failure of posterior pituitary to produce ADH. Opposite problem to SIADH.

**Nephrogenic DI:** Resistance to ADH at the level of the renal tubule;

In either case, there is nothing triggering the ADH-mediated aquaporin channels at the distal tubule and collecting duct. Therefore….

**FAILURE TO CONCENTRATE THE URINE**

Thus;

- polyuria
- nocturia
- dehydration
- failure to thrive

**“Water Deprivation Test”:**

**Stage 1:**

1) Test the urine first thing in the morning.
2) Dehydrate your patient. Weigh them every 2 or so hours, to make sure the volume depletion is no greater than 2-5%. Don’t withdraw fluids for longer than 4 hrs in infants and 7 hrs in older children.
3) Then test the urine for specific gravity.

**SPECIFIC GRAVITY SHOULD BE HIGHER THAN BASELINE.**

By being deprived of water, you should start concentrating your urine. **In any diabetes insipidus, the specific gravity will stay much the same.**

**Stage 2:**

Administer ADH:

**CENTRAL DI** will respond with a decreased urine output and an elevated specific gravity; you had no ADH before and now you do, and everything works properly again.

**NPHROGENIC DI** won’t respond at all to extra ADH, because the kidneys are resistant to it.