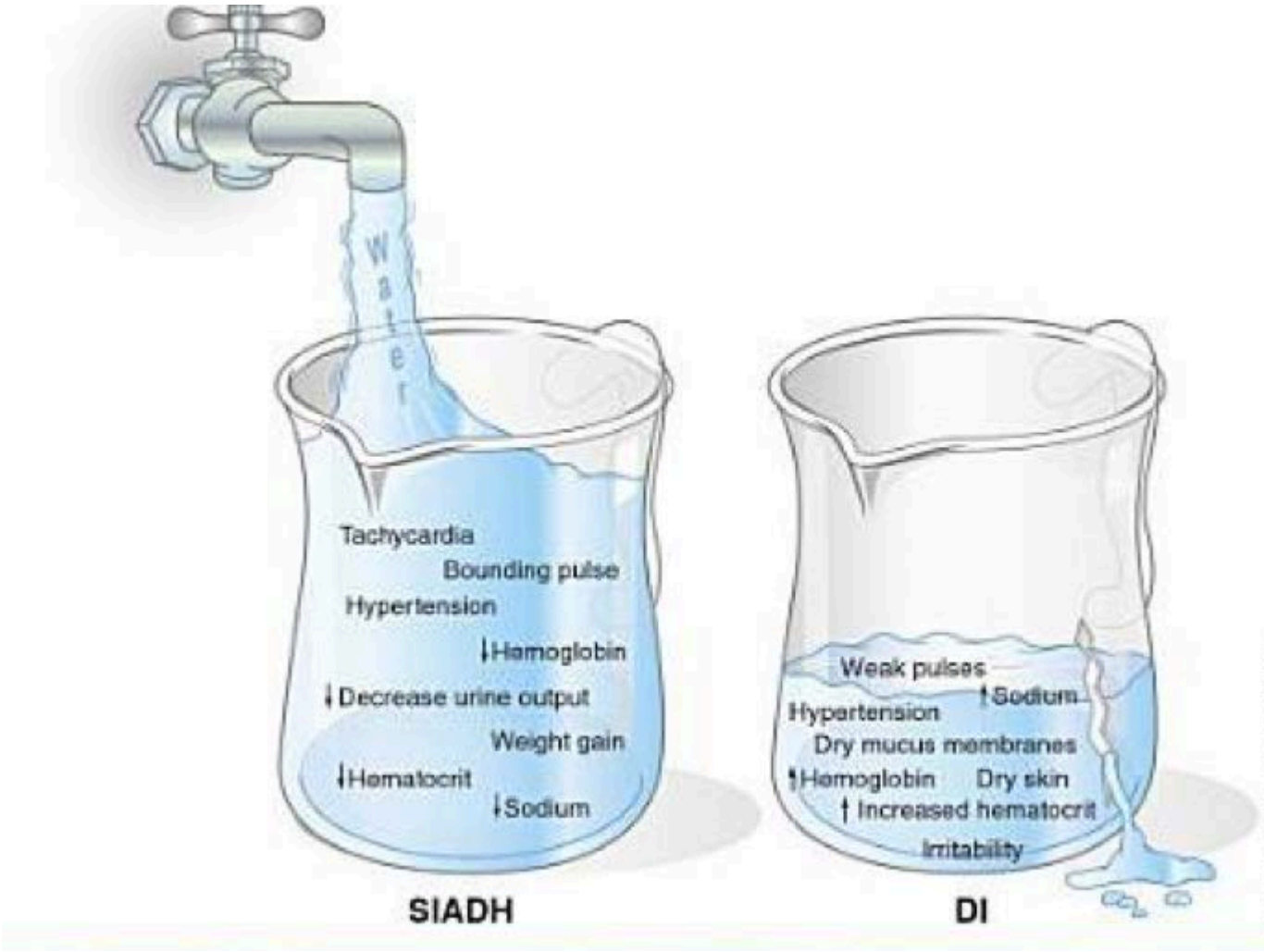
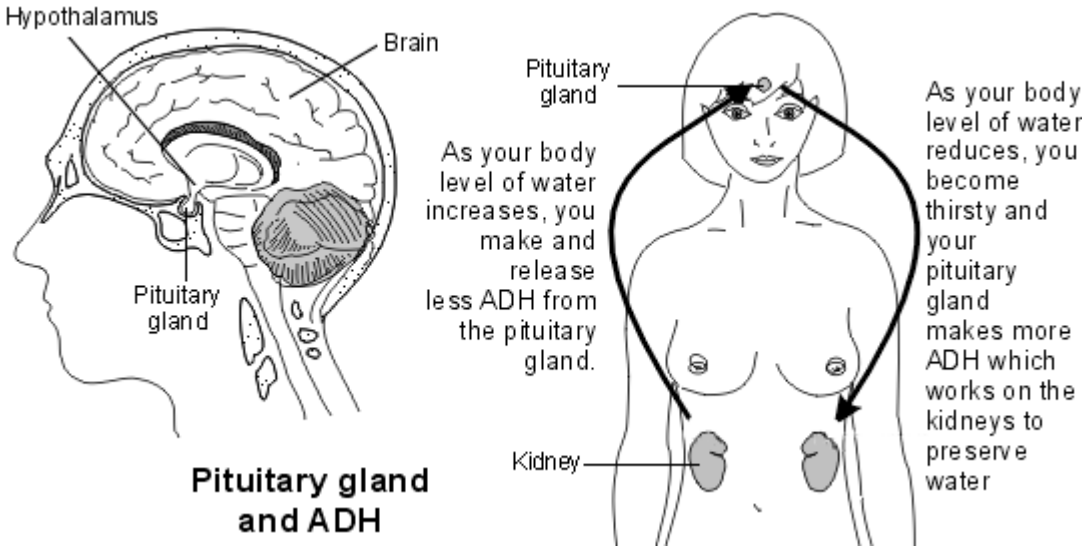
SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE (SIADH)
AND DIABETES INSIPUDUS (DI)



Compare and contrast **SIADH** and **Diabetes Insipidus**

	SIADH	DI
Pathophysiology	Abnormal production or secretion of ADH	*Deficiency of production or secretion of ADH or decrease renal response to ADH. The result in F&E imbalance caused by increased UOP and increased plasma osmo.* *Central or neurogenic DI. Occurs when an organic lesion of the hypothamus, infundibular stem, or posterior pituitary interferes with ADH synthesis, transport or release.* *Nephrogenic* *There is adequate ADH but decrease response to ADH in the kidney. Lithium is the most common cause* *Dispogenic* *Excessive water intake. Can be caused by structural lesion or psychologic disorder (schizophrenia)*
Etiology	The most common cause is malignancy, esp small cell lung cancer. Head injury, CVA/injury, brain tumor, infection(encephalitis, meningitis) SLE, Guillian-Barre, Drugs (Tegretol, Diabinese, opioids, oxytocin, thiazide diuretics, tricyclic antidepressants, anesthesia and antineoplastic agents.	CDI: Head trauma usually self limiting intracranial surgery (DI more likely to be permanent DI has a *triphasic* pattern ***Acute:*** abrupt onset of polyuria ***Interphase***: urine volume generally normalizes ***Third phase*** Where DI is permanent usually apparent within 10-14 days
Clinical Manifestations	Fluid retention, hypoosmolality, dilutional hyponatremia,	Thirst (polydipsia), polyuria\ Large quantities of urine 5-20 L/d

	hypochloridemia, concentrated urine, normal renal function	With low SG and urine osmolality. Elevated serum osmolality as a result of hypernatremia due to pure water loss. CDI: patients want cold or iced drinks. Nocturia
Diagnostic Studies	Serum, urine osmo Serum sodium, urine sodium, BUN, creatinine clearance, Hgb, HCT	H&P Urine and plasma osmo Serum and urine sodium Water deprivation test SG
Treatment/Management	If serum sodium > 125 mEq Fluid restriction 800-1000ml/day. This should cause a gradual daily reduction in weight, rise in sodium, and osmo. Lasix may be use to promote diuresis Potassium supplements Sodium< 120 mEq Hypertonic saline 3-5% slow infusion Fluid restriction of 500 ml /day Demeclocycline (Declomycin) and Lithium These agents block the effect of ADH on the renal tubules, thereby allowing more dilute urine.	Hypotonic saline titrated to replace UOP. Desmopressin acetate (DDAVP) an analog of ADH ADH replacement Vasopressin Vasopressin tannate Vasopressin Lysine Potentiate the action of ADH and stimulate endogenous release Diabinese Atromid Tegretol NDI Thiazide diuretics (HCTZ) Diet: low sodium Indomethacin



1. List five essential assessments that should be done for a patient with SIADH & DI . Why are these assessments necessary?

SIADH	DIABETES INSIPIDUS
1. 2 3. 4. 5	1. 2. 3. 4. 5.

2. What are early signs and symptoms of SIADH & DI?

SIADH	DIABETES INSIPIDUS

3. Explain, why it is important to monitor a client with SIADH or Diabetes Insipidus serum sodium and urine sodium.

4. What are the three most import complication a nurse must monitor post-operatively for a client who has undergone a ***transphenoidal hypophysectomy?***

5. A client asks what is the "***Water deprivation test***?" What would you explain to him?

6. What are you nursing responsibilities for the fluid deprivation test?

7. When assessing your client being treated with ***Demeclomycin*** what symptoms would you assess for to determine that the treatment is effective?

8. ***Desmopressin acetate*** (DDAVP) is the drug of choice when treating a client with Diabetes Insipidus. What is the action of this drug and what nursing responsibilities are important when administering it?

9. What is Nephrogenic DI (NDI)?

10. In the treatment of SIADH and DI correlate the therapeutic use of a 3% hypertonic saline.

- In SIADH the patient may have dilutional hyponaterimia if the serum sodium levels drop below 120 mEq/dl. The patient may become symptomatic and require treatment with a hypertonic solution to bring up the sodium level.
- In DI the serum osmolality increases d/t the loss of fluid. You would not give a hypertonic solution to treat unless the patient was over treated with fluid replacement and the serum sodium fell. The if the patient is symptomatic may require slow infusion of a hypertonic solution to correct the imbalance

11. The physicians orders Lasix 40 mg IVP for your client with SIADH. You review your labs and notice that their serum sodium is only 124 mEq/L. What should be your nursing intervention and why?

12. Why is it important to monitor a client with DI/SIADH vital signs, UOP, weight, and LOC so closely?

13. When positioning a client with trauma (head) induced SIADH, which position should the client maintain? Explain why.

14. What diet constraints does a client with SIADH and DI have?

15. List three (3) routes in which DDAVP can be administered.

16. During the first 8-hours after a head injury a client's urine output is 300mL and no diuretics have been given. This clinical sign probably indicates:
a. cerebral edema.
b. diabetes insipidus.
c. syndrome of inappropriate antidiuretic hormone.
d. rising intracranial pressure.

17. When assessing a client with diabetes insipidus, which finding would indicate the need for intervention? Explain your answer
a. Edema
b. Increased head circumference
c. Weight gain
d. Weight loss

Explanation:

18. In a client with diabetes insipidus, a nurse expects which characteristics of the urine?
a. Pale in color; specific gravity less than 1.006
b. Concentrated; specific gravity less than 1.006
c. Concentrated; specific gravity greater than 1.010
d. Pale in color; specific gravity more than 1.025

19. Which is the best monitoring method for a client newly diagnosed with DI?
a. Measuring I&O's and urine specific gravity
b. Measuring abdominal girths every day
c. Checking daily weights and measuring intake
d. Checking pitting edema in the lower extremities

20. Which clinical manifestations is the most important for the nurse report in a client with SIADH? Explain why it is important
a. Serum calcium of 10mg/dL and tented tissue turgor.
b. Serum magnesium of 1.2 mg/dL and large urinary output.
c. Serum sodium of 112 m Eq/L and a headache.
d. Serum potassium of 5.2 mEq/L and weight loss

Explanation:

21. What findings indicate that the treatment for SIADH is effective? (Select all that apply)
a. Decrease in body weight
b. Rise in blood pressure; drop in HR
c. Absence of wheezes in the lung
d. Decrease in urine osmolality

22. Which laboratory value is the most important to monitor in a client with SIADH? Explain your answer.
a. Glucose
b. Hemoglobin
c. Creatinine
d. Sodium

Explanation:

23. Which statement by the client indicates that DDAVP medication is effective?
a. “ My headache are much better since I have been taking on this medication.”
b. “ My nasal drainage was initially worse, but now I don’t have any.”
c. “ I am not so thirsty when I take this medication.”
d. “ My seizures have been eliminated.”

Syndrome of Inappropriate ADH(SIADH) vs Diabetes Insipidus

Diabetes Insipidus

- Decr secretion of ADH (opposes Diuresis – decre secretion would mean that the body would loose large quantities of fluid via the u/o)
- Assessment:
  - **Polyuria (4-24 L/day), Polydipsia, Dehydration**
  - Inability to concentrate urine (sg 1.006 or lower)
  - Fatigue, muscle pain, weakness, h/a
  - Postural hypotension, tachycardia
- Tx:
  - Monitor v/s and neuro and CV status
  - Safety: postural hypotension
  - Monitor electrolytes
  - Monitor I/O, wt, serum osmolality, urine s.g.
  - Restrict foods, liqu that produce diuresis
  - Diabinese
  - Pitressin, desmopressin acetate
  - Medic alert bracelet

SIADH

- Incr secretion of ADH (the body would retain fluid)
- Assessment:
  - **s/s fluid volume overload**
  - LOC changes
  - Wt gain, anorexia, nausea, vomiting
  - Hyponatremia (dilutional)
  - Hypertension, tachycardia
- Tx
  - Monitor v/s
  - Safety: altered LOC
  - I/O, daily wt
  - Monitor electrolytes, serum/urine osmolality,
  - Restrict fluid intake
  - Adm diuretics and IV fluids
  - Demeclocycline