antidiuretic hormone (ADH)

(ăn´´ tĭ-dī-ū-rĕt´ ĭk hor´mōn)

DEFINITION:

A hormone secreted from the pituitary mechanism that causes the kidney to conserve water; sometimes referred to as the "water conserving hormone."

KEEP IN MIND:

Affects the renal reabsorption of water. Maintains osmotic pressure of the cells by controlling renal water retention or excretion.

APPLICATION:

Factors that affect *antidiuretic hormone (ADH)* production include anesthesia, certain drugs, and head trauma.

NOTES:

diffusion

(dĭ-fū´zhŭn)

DEFINITION:

The movement of a substance from a region of high concentration to one of lower concentration.

KEEP IN MIND:

In the body, oxygen and carbon dioxide move by diffusion. Glucose can diffuse through a cell membrane with the help of proteins acting as carrier molecules.

APPLICATION:

The exchange of oxygen and carbon dioxide (CO_2) between the alveoli and capillaries is an example of *diffusion*.

NOTES:

homeostasis

(hō´´ mē-ō-stā´sĭs)

DEFINITION:

The state of dynamic equilibrium of the internal environment of the body that is maintained by the ever-changing processes of feedback and regulation in response to external or internal changes.

KEEP IN MIND:

Homeostatic mechanisms keep the composition and volume of body fluid within the narrow limits of normal. Organs involved in this mechanism include the kidneys, lungs, heart, blood vessels, adrenal glands, para-thyroid glands, and pituitary gland.

APPLICATION:

The patient with renal and pulmonary diseases has disturbances in *homeostatic* mechanisms that affect fluid and electrolyte balance.

NOTES:

insensible fluid loss

(ĭn-sĕn´sĭ-bl floo´ ĭd los)

DEFINITION:

Fluid loss that is not perceptible to the individual, nonvisible form of water loss that is difficult to measure.

KEEP IN MIND:

Insensible fluid loss occurs from the skin and lungs. Continuous water loss by evaporation (600 mL/day) occurs through the skin. The lungs remove about 300 mL of water daily through exhalation The presence of fever greatly increases insensible fluid loss through the lungs and the skin. Loss of the natural skin barrier in major burns also increases water loss by this route.

APPLICATION:

The patient was febrile with a temperature of 102°F and respirations of 36; the *insensible loss* was a great concern in fluid replacement needs.

NOTES:

syndrome of inappropriate antidiuretic hormone (SIADH)

(sĭn´drōm ĭn- ă-prō´prē-ăt ăn´´tĭ-dī-ū-rĕt´ĭk hor´mōn)

DEFINITION:

A condition in which excessive ADH is secreted from the pituitary resulting in hyponatremia and extracellular fluid volume excess.

KEEP IN MIND:

In SIADH, the amount of sodium per volume is reduced, in turn causing a dilutional hyponatremia. SIADH is becoming more common in patients with inflammatory disorders such as pneumonia, tuberculosis, abscess, and central nervous system disoders.

APPLICATION:

The patient with meningitis who had a urine specific gravity of 1.003 and a serum sodium of 115 mEq/L was treated for *syndrome of inappropriate antidiuretic hormone.*

NOTES:

transcellular

(trăn´´sel´ ū-lăr)

DEFINITION:

Compartment of extracellular fluids; includes cerebrospinal, pericardial, pancreatic, pleural, intraocular, biliary, peritoneal, and synovial fluids.

KEEP IN MIND:

Part of the extracellular fluid (ECF) is the transcellular fluid with ionic compositions different from the plasma and interstitial fluids.

APPLICATION:

The patient received a peritoneal lavage with lactated Ringer's solution for pancreatitis to remove *transcellular* fluid containing toxins and various metabolites from the peritoneal cavity.

NOTES:

tetany

(tĕt´ ă-nē)

DEFINITION:

Continuous tonic spasms of a muscle.

KEEP IN MIND:

Tetany can occur in hypocalcemia and hypomagnesemia.

APPLICATION:

The nurse assessing the patient for hypocalcemia checked for *tetany* by trying to elicit Chvostek's signs.

NOTES: