Assessment and Management of Patients With Endocrine Disorders

Shu-Yi (Emily) Wang, PhD, RN, CNS

gpwsy@hotmail.com
s.wang@denverschoolofnursing.edu

Denver School of Nursing
Major Hormone Secreting Glands of the Endocrine System

- Hypothalamus
- Pineal
- Pituitary (hypophysis)
- Thyroid
- Parathyroid (posterior)
- Thymus
- Adrenals (suprarenals)
- Islets of Langerhans (in pancreas)
- Ovaries
- Testes

Immune ➔ Myasthenia Gravis, MG
Figure 48-6, pp. 1238
Pathophysiology of SIADH

1. Increased antidiuretic hormone
2. Increased water reabsorption in renal tubules
3. Increased intravascular fluid volume
4. Dilutional hyponatremia and decreased serum osmolality

Figure 50-3, pp. 1295
Pathophysiology of DI

- Decreased antidiuretic hormone
- Decreased water reabsorption in renal tubules
- Decreased intravascular fluid volume
  - Increased serum osmolality (hyponatremia)
  - Excessive urine output

Figure 50-4, pp. 1296
DIABETES INSIPIDUS

History of →
- Head Injury
- Pituitary Tumor
- Craniotomy

Rx:
- Vasopressin (DDAVP)

S&S
- Up to 20L Urine/Day
- ↓ Specific Gravity
- ↓ Osmolarity
- Hypovolemia
- ↑ Thirst
- Tachycardia
- ↓ BP

Nursing Care
- Monitor Fluids
- Replace Fluids
- Neuro Status
- Vital Signs
- Mucous Membranes
Hypothalamic-Pituitary-Thyroid Axis
HISTOLOGIC CHANGES IN HASHIMOTO'S THYROIDITIS

Normal

Inactive

Active

Parafollicular cells

Colloid

Follicular epithelial cells

Hashimoto's thyroiditis

Lymphocytes and plasma cells

Atrophied follicles

Metaplasia of follicular epithelial cells

Inflammation with progressive fibrosis

Copyright ©2003 Lippincott Williams & Wilkins
HYPOTHYROIDISM

- Intolerance to Cold
- Receding Hairline
- Facial & Eyelid Edema
- Dull-Blank Expression
- Extreme Fatigue
- Thick Tongue - Slow Speech
- Anorexia
- Brittle Nails & Hair
- Menstrual Disturbances
- Late Clinical Manifestations
  - Subnormal Temp
  - Bradycardia
  - Weight Gain
  - ↓ LOC
  - Thickened Skin
  - Cardiac Complications

Hair Loss
Apathy
Lethargy
Dry Skin (Coarse & Scaly)
Muscle Aches & Weakness
Constipation
HISTOLOGIC CHANGES IN GRAVES’ DISEASE

Normal
- Inactive
- Active
  - Parafollicular cells
  - Colloid
  - Follicular epithelial cells

Graves’ disease
- Decreased colloid
- Tall columnar follicular epithelial cells
- Scattered lymphocytes and plasma cells

Copyright ©2003 Lippincott Williams & Wilkins
HYPERTHYROIDISM

- Intolerance to Heat
- Fine, Straight Hair
- Bulging Eyes
- Facial Flushing
- Enlarged Thyroid
- Tachycardia
- ↑ Systolic BP
- Breast Enlargement
- Weight Loss
- Muscle Wasting
- Localized Edema
- Finger Clubbing
- Tremors
- ↑ Diarrhea

Menstrual Changes (Amenorrhea)
Parathyroid Gland (Con’t)

4 glands on the posterior thyroid gland
PATHOGENESIS OF HYPERPARATHYROIDISM

Tumor or hyperplastic tissue secretes excess PTH

- Thyroid cartilage
- Superior parathyroid glands
- Thyroid gland
- Inferior parathyroid glands

Renal tubule
- Enhanced calcium reabsorption and phosphate excretion

Bone
- Enhanced calcium and phosphate resorption

GI tract
- Enhanced calcium absorption
Adrenal Glands (Con’t)

ADRENAL GLAND HORMONES

- **S** Sugar (Glucocorticoids)
- **S** Salt (Mineralcorticoids)
- **S** Sex (Androgens)

Figure 48-11, pp. 1241
ADRENAL HORMONE SECRETION

Adrenal hormones

Adrenal gland

Adrenal gland cross section

Cortex
- Mineralocorticoids
- Glucocorticoids
- Androgens
- Estrogens

Medulla
- Norepinephrine
- Epinephrine
ADDISON'S DISEASE
Adrenocortical Insufficiency

Bronze Pigmentation of Skin
Changes In Distribution of Body Hair
GI Disturbances
Weakness

Hypoglycemia
Postural Hypotension
Weight Loss

Adrenal Crisis:
Profound Fatigue
Dehydration
Vascular Collapse (↓BP)
Renal Shut Down
↓Serum NA
↑Serum K

©2007 Nursing Education Consultants, Inc.
Thinning of hair

Acne

Red cheeks

Buffalo hump

Supraclavicular fat pad

Moon face

Increased body and facial hair

Weight gain

Purple striae

Pendulous abdomen

Ecchymosis resulting from easy bruising

Thin skin and subcutaneous tissue

Slow wound healing
CUSHING'S SYNDROME

- Personality Changes
- Hyperglycemia
- Moon Face
- CNS Irritability
- ↑ Susceptibility to Infection
- Males: Gynecomastia
- NA & Fluid Retention (Edema)
- Thin Extremities
- GI Distress -↑Acid
- Females: Amenorrhea, Hirsutism
- Thin Skin
- Purple Striae
- Bruises & Petechiae
- Fat Deposits on Face and Back of Shoulders
- Osteoporosis