**October 8, 2024 AHD Learning Objectives**

**Renal Transplant:**

1. Describe the benefit to patients who obtain a well-timed renal transplant before the need for initiation of dialysis.
2. List the immunosuppression drugs required for successful transplantation and know the side effects of each of these medications.
3. Understand the diagnosis, the pathophysiology, and the management of patients with acute cell-mediated rejection and antibody mediated rejection.

**Urinalysis:**

1. Describe the appropriate urine specimen collection and storage in ambulatory patients and hospitalized patients with Foley catheters to accurately interpret the urinalysis.
2. List the possible causes of urine that is cloudy, orange, brown, or red.
3. Predict how the urinalysis will appear in disorders of volume and tonicity.
4. Describe the conditions associated with the following urine casts: Hyaline, Erythrocyte, Leukocyte, Epithelial, Granular, and Fatty.

**Dysnatremias:**

1. Describe the evaluation and management of the patient who presents with **symptomatic** severe hyponatremia.
2. Describe the evaluation of a patient who presents with asymptomatic hyponatremia of unknown duration.
3. Know the differential diagnosis for hyperosmotic hyponatremia, isosmotic hyponatremia, and hypoosmotic hyponatremia.
4. Describe the evaluation and management of a patient with hypervolemic hypoosmotic hyponatremia, euvolemic hypoosmotic hyponatremia, and hypovolemic hypoosmotic hyponatremia.
5. In a patient with hypernatremia, calculate a free water deficit, describe the type of fluid and rate of fluid per hour IV to correct the deficit. Know the safe parameters of correction to avoid complications such as osmotic demyelination.