Week 4: Open Forum Discussion

This week, we are covering Alterations in Renal and Urinary Function. As you reflect on the concepts of fluid and electrolytes and acid/base balance covered in the last two weeks, tell us one alteration that could occur in fluid and electrolyte and acid/base balance due to a renal or urinary disorder.

Sometimes, the kidney is suddenly (which can range from hours to days) unable to clear waste products as well as perform regulation of fluid and electrolyte balance. This condition is referred to as acute kidney injury (AKI). In the event the kidney cannot regulate the level of Potassium leading to imbalances, the individual may suffer from tachycardia. Notably, most of the AKI can be reversed if diagnosis and treatment are done early. AKI can result in CKD (Zuk & Bonventre, 2016).

Normally, potassium cations are the most abundant in the body and the ICF compartment has major cation. The potassium cations are quite critical in many body functions such as maintenance of osmotic integrity of cells, the balance of acid and base in the body, as well as the ability of the kidney to concentrate urine. It is the kidney that provides a major route for the elimination of Potassium. When the level of serum potassium is high, potassium is secreted into the urine while hydrogen reabsorbed into the blood. This reduces pH and metabolic acidosis. When the level of potassium is low, potassium is reabsorbed into the blood while hydrogen secreted into the urine (Hamm et al., 2015). This leads to metabolic alkalosis. That is how the kidney balances the acid-base levels in the body.