Normal serum sodium concentration lies between 133 and 145 mM, this concentration determines the number of cations needed in intravascular space to achieve homeostasis with the interstitial and intracellular spaces. Another measure to total amount of sodium which is a major determinant of water balance ,therefore imbalances in sodium are best evaluated by serum sodium, followed by serum osmolality and then volume status(Kraft *et al.*, 2005; Sahay & Sahay, 2014)

1.1.2 Potassium

Potassium is the most abundant intracellular electrolyte in the body , 98% of body`s potassium is found in the intracellular space , while only 2% is found in the extracellular space. The sodium-potassium-adenosinetriphosphatase (Na-K-ATPase) pump is responsible for potassium entry into cells The normal concentration of potassium in serum is 3.5-5mN/L . Potassium is utilized for essential functions including regulation of action potentials across the membranes of excitable tissue, cellular metabolism, and glycogen and protein synthesis (Halperin & Kamel, 1998; Lobo, 2004).

The major route of potassium excretion is kidney. Many factors can alter potassium concentrations, including acid-base balance, kidney and organ dysfunction, trauma and malnutrition, furthermore, alternations in potassium level can cause severe cardiac abnormalities, therefore, close monitoring is required for critically ill patients (Buckley *et al.*, 2010; Wang *et al*., 2013).