Being the major route of excretion, kidney plays a major role in magnesium homeostasis. Normally, when 80% of total plasma magnesium is ultrafiltrable, 84 mmol of magnesium is filtered daily, of this amount 95% is reabsorbed, of them 15-20% is reabsorbed in the proximal tubules, 65-70% in thick ascending loop of Henle and the rest in distal tubules (Swaminathan, 2003; Pasternak *et al.*, 2010; Jahnen-Dechent & Ketteler, 2012). In proximal tubules, magnesium is reabsorbed passively, this process mainly depends on sodium/water reabsorbtion and on luminal magnesium concentration. In thick ascending loop of Henle, magnesium reabsorbtion depends on sodium/chloride reabsorbtion and the positive luminal charge created by active cellular pumps and passive paracellular diffusion. On the other side, magnesium reabsorbtion is active and transcellular in the distal tubules. Magnesium reabsorbtion is inversely related to the rate of fluid flow in the tubules (Wester, 1987; Rude, 1998; Pasternak *et al.*, 2010; Jahnen-Dechent & Ketteler, 2012).

## 1.6 Hypomagnesaemia

Magnesium deficiency, also known as hypomagnesemia is an electrolyte disorder that is frequently undetected owing to the fact that hypomagnesemia is often asymptomatic or a secondary disorder. Therefore, recent studies shows that hypomagnesemia is present more than previously thought (Swaminathan, 2003; Shah *et al.*, 2014).In general, clinical manifestations of magnesium deficiency are usually not seen until serum magnesium concentration decreases to 0.5 mmol/L or lower, Table(5) shows a list of magnesium deficiency clinical manifistations (Rude, 1998; Jahnen-Dechent & Ketteler, 2012; Zittermann, 2013).