**Hypokalaemia DR.Methaq A.M.Hussein**

**Major causes of hypokalemia**

***1.Decreased potassium intake***

***2.Increased entry into cells***

An elevation in extracellular pH

Increased availability of insulin

Elevated -adrenergic activity - stress or administration of beta agonists

Hypokalemic periodic paralysis

Marked increase in blood cell production

Hypothermia

Chloroquine intoxication

***3.Increased gastrointestinal losses***

Vomiting ,Diarrhea,tube drainage,laxative abuse

***4.Increased urinary losses***

Diuretics

Primary mineralocorticoid excess

Loss of gastric secretions

Nonreabsorbable anions

Metabolic acidosis ,hypomagnecaemia,amphotreicin B

***5.Increased sweat losses***

***6.Dialysis***

***7.Plasmapheresis***

***MANIFESTATIONS OF HYPOKALEMIA******1.Severe muscle weakness or paralysis*** *inability to walk,if sever form can cause Respiratory muscle weakness, which can be severe enough to result in respiratory failure and death. Involvement of gastrointestinal muscles, resulting in ileus and its associated symptoms of distension, anorexia, nausea and vomiting. Cramps, paresthesias, , muscle tenderness and atrophy.* ***2.Cardiac arrhythmias and ECG abnormalities*** *A variety of arrhythmias may be seen with hypokalemia. These include premature atrial and ventricular beats, sinus bradycardia, paroxysmal atrial or junctional tachycardia, atrioventricular block, and ventricular tachycardia or fibrillation. Hypokalemia produces characteristic changes on the ECG. There is depression of the ST segment, decrease in the amplitude of the T wave, and an increase in the amplitude of U waves which occur at the end of the T wave* ***3.Rhabdomyolysis 4.Renal abnormalities***

***Diagnosis***

1.history.

2.plasma level s.K less then 3.5 mmol/lit.

3.ECG

4.urinary K less then 20 mmol/lit in all causes except the renal causes in which more then 30 mmol/lit.

**Treatment**

***1.****An intravenous or oral potassium chloride preparation is generally preferred over potassium citrate or potassium bicarbonate, in particular among patients with metabolic alkalosis due to diuretic therapy, vomiting, and hyperaldosteronism. On the other hand, potassium citrate or potassium bicarbonate is often preferred in patients with hypokalemia and metabolic acidosis. This most often occurs in renal tubular acidosis and chronic diarrheal states*

**2**.Intravenous administration — *Potassium chloride can be given intravenously to*

*patients who are unable to eat or as an adjunct to oral replacement in patients who have severe symptomatic hypokalemia.*

*In most patients, intravenous potassium is administered as an additive in intravenous fluids at concentrations of 20 to 40 meq per liter of fluid through a peripheral vein. A concentration up to 60 meq/L can also be used, but such higher concentrations are often painful.*

*A saline rather than a dextrose solution is recommended for initial therapy, since the administration of dextrose can lead to a transient 0.2 to 1.4 meq/L reduction in the serum potassium concentration, particularly if only 20 meq/L of potassium chloride is provide*