Introduction and Aim of The Work

Introduction:

Silicon (Si) is an essential trace element and is the second most frequent element in the earth's crust. It has an atomic weight of 28, and four particularly rigid bonds **(Geoffrey et al., 1985).**

Silicon is essential for the development of bone, cartilage, and connective tissue collagen. **(Carlisle, 1972).**

The kidney is the major organ for elimination of silicon, and in cases of renal failure there is an increase in silicon deposition in the heart, kidney, and spleen as well as increased silicon content in red cells and hair. An excess of silicon has been associated with a host of diseases, including nephropathy, "characterized pathologically by changes in the glomeruli and proximal tubules and manifested clinically by albuminuria and hypertension" **(Leopoldo et al., 1975),** urinary calculi, neuropathy, hepatic abnormalities, mesothelioma, and pulmonary fibrosis **(Leopoldo et al., 1997).**

Silicon is also found in alumino-silicate plaques in the brains of patients with Alzheimer's disease **(Birchall and Chappel, 1988).**

Concentrations of silicon in plasma increase with decreasing glomerular filtration rate, in undialyzed patients with chronic renal failure, while in those on haemodialysis silicon concentrations in serum increase by up to 20-fold. It might be expected that they would be at risk for the development of silicon toxicity or what is called Si-related syndrome which is characterized by nodular skin eruptions and aberrant hair growth and Characterized as perforating folliculitis on skin biopsy **(Leopoldo et al., 1997).**

The Aim of the present study is:

1- To study silicon toxicity as a possible cause of nephropathy in patients with renal insufficiency of unknown aetiology.

2- To study silicon toxicity in patients with end stage renal disease "ESRD" and to study the clinical syndrome of silicon toxicity and its possible effect on calcium metabolism and whether it plays a role in pathogenesis of arthropathy due to its possible effect on the connective tissue collagen.