



# Assessment of Serum Level of Electrolytes and Trace Elements in Leukaemia Patients in Sudan.

Eiman A. A. Elshaygi

Al-jouf university, Saudi Arabia

Electrolytes and trace elements disturbances frequently occur with leukaemia patients that complicate their management and prolong patients hospitalization. This research work investigated the interrelationship among different types of leukaemia with concentration of electrolytes and trace elements in Sudanese patients..

**Aim:** 201 subjects; ( 79 control participants and 122 were suffering from leukaemia). Patients were divided into four groups; acute lymphoid leukaemia (ALL), acute myeloid leukaemia (AML), chronic myeloid leukaemia (CML), chronic lymphoid leukaemia (CLL). Some electrolytes and trace elements zinc (Zn), copper (Cu), manganese (Mn) and cobalt (Co).

Significant decrease in serum level of Cu, Mn and Co ( $p < 0.05$ ) was observed in all groups. Zinc and calcium showed lower levels in CLL, CML and ALL ( $p < 0.05$ ). The results also showed significantly higher serum level of Zn in AML group than CML group ( $p < 0.05$ ). Magnesium reported higher level in CML, AML and ALL ( $p < 0.01$ ). The concentration of Mg was significantly lower in CLL ( $p < 0.05$ ) compared to CML, AML and ALL patients. The concentration of sodium was significantly lower in CML than the ALL patients ( $p < 0.05$ ). There is no significant difference between the levels of Na, K and  $PO_4^{3-}$  in leukaemia patients and control.

This study concluded that, leukaemia patients in Sudan recorded significant decrease in serum levels of copper, manganese and cobalt. Most of them showed higher magnesium levels and lower concentration of zinc and calcium.

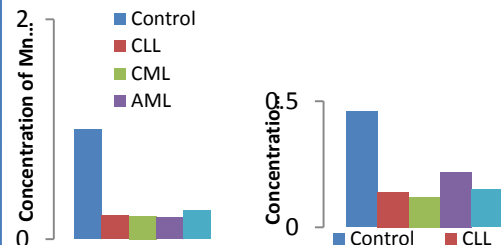
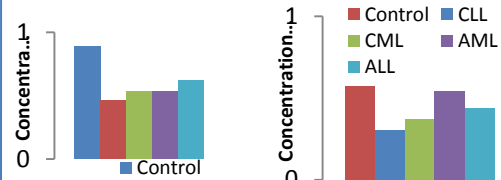
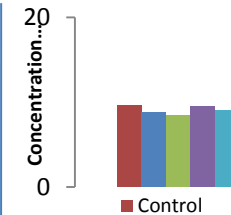
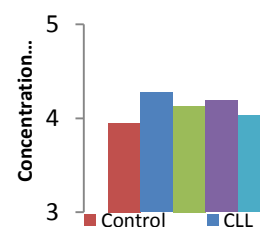
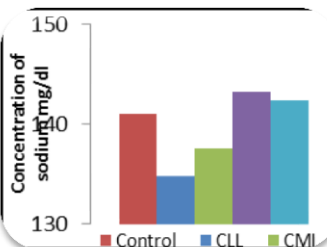
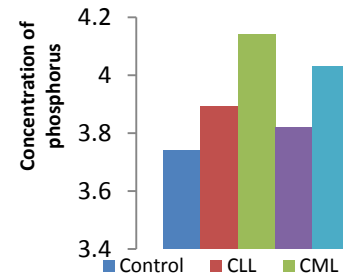
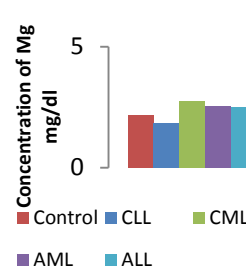


Figure: Concentration of Cu, Zn, Mn and Co in subtypes of leukaemia