SUMMARY

Zinc is a trace element that is considered to be one of the most important essential micronutrients required for life.It affect many aspects of immunologic,metoblic and physiologic function in human beings during health and disease as it is required for normal functions of many enzymes as well as other transcription related factors.

The aim of study was to determination of corrlection between the serum zinc and copper level in children suffering from Critical Illnesses to the degree of organ failure.

This case controlled study included forty Child children. With Critical illness Their age range from one day to18 years, addmited to Behna University Hospital (Intensive Care unit) Cairo University Hospital (Intensive Care unit) from Feburary to October 2009. Twenty age and sex- matched healthy children were included in the study as controls, they were exposed to the same history taking, clinical examination and laboratory investigations as the cases.

Estimation of serum zinc and copper level was performed by atomic absorbtion spectrophotometry (ASS).

In our study, the mean serum zinc in cases was lower than that of controls (**52.5± 5.3** ug/L in cases compared to **60-110**ug/L in healthy), yet that difference reach the statistical significance. However no statistical difference in the level of copper between control group and cases($p>0.05$). Regrading to mean serum zinc ,CRP and absolute band cells There is statistical significance between cases and control group on admission and three days later in spite no statistical significance between them regarding TLC. We found also corrlection between mean serum

zinc and outcome as the survivors had concentration more than non survivors.

We concluded that serum zinc was significantly lower in children with critical illnesses compared to their controls.

Whether zinc supplementation for critically ill patient is beneficial in hastening there recovery and reducing the mortality rate is still unknown, we plane to pursure these question in further studies.