

THERAPEUTIC TRIAL FOR ANAEMIA DUE TO INORGANIC LEAD

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Summary

Forty normochromic normocytic anaemic individuals exposing to lead were the studied sample. Ten received a chelator only, 10 received lead absorption inhibitors, 10 received both the chelator and the lead absorption inhibitors and the remaining 10 cases were left without any therapy. All the treated cases showed significant increase in their Hb level, RBC count as well as a decrease in the STI and STIBC. These changes were the highest among the group who received both the chelator and the lead absorption inhibitors and were the lowest among the group who received lead absorption inhibitors only. Lead anaemic cases have a good chance for treatment by using both chelators and lead absorption inhibitors.

Introduction

Lead poisoning occurs from many sources as inhaled fumes in various industries, ingested contaminated food supplements and lodged bullets (1).

Lead has numerous effects on the erythropoietic system (2). Heterozygotes of hereditary aminolevulonic acid dehydratase (AL A-D) deficiency are said to be more susceptible to lower levels of lead exposure (3).

Lead has been known to inhibit erythrocytic pyrimidine -5- nucleotidase (P5N) in both children and adults which results in the accumulation of nucleotides in erythrocytes affecting stability of cell membrane, and promote haemolysis of red cells (4,5). This and other interaction with

cell membrane as interference with N^+ / K^+ adenosine triphosphate have been suggested as the biochemical basic for shortening erythrocyte survival time and haemolysis(6-8).

One of the most important mechanisms of lead toxicity is its effect on various enzymes in haem biosynthetic pathway. The haematopoietic system is considered one of the critical organs in lead poisoning (9-11). The two target sites in biosynthetic pathway of haem in which the effect of lead is of the most clinical interest are the sites of activity of (ALA-D) and ferrochelatase, both of which are inhibited by lead. In addition a simulatory effect of

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