

## DETERMINE THE EFFECT OF OXIDATIVE STRESS ON ALKALINE DNASE ACTIVITY IN CHILD ACUTE LYMPHOBLASTIC LEUKEMIA

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### ABSTRACT

**Background:** Acute lymphoblastic leukemia (ALL) represents the malignant proliferation of lymphoid cells blocked at early stages of differentiation and is the most common malignancy in children. The aim of the present study is to Determine the correlation between Advanced oxidation protein products(AOPP) and Alkaline DNase Activity in child with ALL after one month treatment with induction therapy, purification Alkaline DNase in patients and control groups and measurement Kinetic Parameters ( $K_m$  and  $V_{max}$ ) of these enzyme.

**Method:** Laboratory investigations including serum total protein, serum alkaline DNase, total antioxidant activity (TAA) and Advanced oxidation protein products (AOPP). Blood samples were collected from 60 patients diagnosed to Acute lymphoblastic leukemia (ALL) after one month treatment with induction therapy. Age and sex matched 30 healthy persons selected as control.

**Results:** Activities and Specific Activities of Serum Alkaline DNase showed A significant increase in patients group when compared to control group ( $p < 0.001$ ), total antioxidant activity (TAA) showed A significant decrease in patients group when compared to control group ( $P < 0.001$ ), while AOPP, AOPP/TAA ratio and AOPP/S. Proteinratio showed a significant increase in patients group in comparison to control group ( $P < 0.001$ ).

**Conclusions:** The variance in serum alkaline DNase activity and level of AOPP could be a simple, rapid and effective biomarker for monitoring acute lymphoblastic leukemia therapy Correspondingly it was suggested that serum alkaline DNase a known circulating tumor marker may be used for treatment monitoring of ALL patients.

**KEYWORDS:** Acute Lymphoblastic Leukemia (ALL), Alkaline DNase, AOPP, TAA