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Effect of acute lymphoblastic leukemia on salivary alterations in children before and after chemotherapy induction

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Background: Approximately 2,56,000 children and young adults around the world developed acute lymphoblastic leukemia (ALL) which is the most common subtype of Leukemia. The aim of our study was to investigate the effect of acute lymphoblastic leukemia on salivary alterations in children before and after chemotherapy induction.

Materials and methods: This study included 45 children aged from 5 to 9 years. The sample was divided into 3 groups: Group A (control group): clinically healthy un-medicated children, Group B: children with a previous diagnosis of ALL and did not initiate the chemotherapy treatment and Group C: hospitalized children with a previous diagnosis of ALL and who were on chemotherapy (6 months-1.5 years of treatment). From the selected children, stimulated whole saliva samples were collected in graduated tubes with funnels over a 5 minute period in the morning. Saliva samples were used to determine the stimulated salivary flow rate, salivary pH, salivary total proteins and salivary alpha amylase.

Results: The results showed a significant reduction in the mean of salivary flow rate values between group A and group C, also the difference was significant between group B and group C. Regarding mean pH value, there was a significant difference between the 3 groups with an obvious reduction in pH values of groups B & C. Moreover, the findings showed that the means of salivary total proteins and salivary alpha amylase were significantly higher in group B than in group A and group C.

Conclusion: According to ROC curve analysis salivary total proteins reflect an excellent predictor test where the value of total salivary proteins above 8.381 g/dl indicated ALL leukemia with 100% accuracy in children.

Biography

Dr.Ghada ElBaz has completed her PhD in 2004 from Faculty Of Dentistry Suez Canal University and post doctoral studies from the same University. She is an associate professor of Pediatric and Preventive Dentistry and Dental Public Health, Faculty of Dentistry, Suez Canal University. She is the head of Pediatric dentistry department in Suez Canal University. She has published around 25 papers in national and international journals.

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