Bahrain Medical Bulletin, Vol. 33, No. 1, March 2011

Prevalence of Abnormal Hemoglobins among Students in Bahrain: A Ten-Year Study

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Background: Sickle cell disease (SCD) and thalassemia are common in the Arab countries.

Objective: The aim of this study is to evaluate the prevalence of abnormal hemoglobin in secondary school students in Bahrain and to compare the prevalence rates from 1999-2008.

Design: Prospective study.

Setting: Hematology Laboratory at Salmaniya Medical Complex.

Method: The students of the 11th grade (2nd grade in secondary schools), during 1999-2008 were screened. Hb Chromatography was done by HPLC. Informed consents were obtained from the parents.

Result: Sixty thousand and four hundred twenty-four (60,424) students were screened. The most common type of hemoglobin was hemoglobin A, found in 50756 (84%) of the students. The second was Hb S, the average prevalence of SCD was 1.13%, sickle cell trait was seen (SCT) in 13.3%. SCT in 1999 was 13.81 and in 2008 it was 12.8.

Hb D heterozygous was found in 306 (0.51%) of the screened individuals. Hb D homozygous was found in 17 (0.03%). Hb EA heterozygous was found in 84 (0.14%), while Hb E homozygous was found in 3 (0.005%) of the students.

Conclusion: The prevalence of SCD among the age groups (16-18 years) revealed a significant decline during these ten years period *P= .000*. The continuation of the screening and education efforts might reduce the prevalence further, if not eliminate it. SCD in 2000 was 1.3 and in 2008 it was 0.81.

Bahrain Med Bull 2011; 33(1):