Current prevalence of thalassemia and prenatal diagnosis in Bangladesh: A single center hospital based study

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Introduction: Thalassemia is the most common genetic disorder in Bangladesh. Overall prevalence of Beta thalassemia trait is 4.1% and Hemoglobin E trait is 6.1%. In tribal population, Hb E trait was (16-20)%. More than 14000 children are born with thalassaemia despite this huge burden of thalassemia in Bangladesh just only limited peoples participate for prenatal diagnosis. Due to limited facilities for prenatal diagnosis and lack of awareness of the disease.

Objectives: The aims of this study, to demonstrate the current prevalence of thalassemia and prenatal diagnosis attending a tertiary level children hospital of Bangladesh.

Methodology: In this study, a total were included 26434 specimens for prevalence and 260 couples for prenatal diagnosis. Patients with thalassemia variant was detected by VARRIANT II β- thalassemia Short program (Bio-Rad, USA) and prenatal diagnosis of thalassemia was done by Sanger sequencing method.

Result: A total 26434 blood sample were studied in which normal person 14638 (55.4%), Beta thalassemia major 809 (3.06%), Hb E beta thalassemia 2703 (10.2%), Beta thalassemia trait 3274 (12.38%), Hb E trait 4329 (16.4%), Hb E disease 366 (1.4%), Delta beta trait 04 (.02%), Hb S trait 27 (0.1%), Hb D trait 54 (0.2%), Hereditary persistent of total Hb 24(0.09%), Hemoglobin lepore homozygous 06 (0.02%), Hb lepore trait 19 (0.07%), Hb J trait 11 (0.04). And a total 260 of prenatal diagnosis were performed for only Beta trait and Hb E trait parents in which normal fetus 52 (20%), Beta thalassemia major 25 (9.6%), Hemoglobin E-beta thalassemia 44 (16.9%), Beta trait 51 (19.6%) and Hb E trait 88 (33.8%).

Conclusions: This study provides important information about increasing prevalence thalassemia and comparatively less attending in prenatal diagnosis. It will help in the development of similar diagnostic programs for other DNA centers in Bangladesh.