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Evaluation of iron supplements on electrophoretic pattern requested for marriage consultancies

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Background and Aims: Iron Deficiency Anemia (IDA) and thalassemia considered common health problem in Kermanshah and accurate differentiation is crucial in diagnosis and treatment decision. Definition of Betha thalassemia in heterozygote form seems difficult in case of accompany with IDA related to decrease in Hemoglobin A2 (HbA2) value. More often, re-sampling requested after Iron treatment is applied. However diagnosis of pre-birth hemoglobin chain abnormalities is demanding so far, evaluation of hemoglobin subtypes accounted of great value.
Methods: To achieve this aim, a retrospective study performed on 50 files of Hb electrophoresis in couples under marriage consultancy in year 2012. Ferritin value observed less than 40 g/dl and TIBC showed significant difference compare to normal ranges.
Results: Average of HbA2 reported about % 4.1±1 that cross covered with normal range of HbA2 (%2.9 ± 0.6). Average of HbA2 value estimated % 5.6±0.9 that showed considerable difference with normal population after 2 cycles of iron therapy.
Conclusions: Decrease of HbA2 level may originate from lack of transcription and/or decrease of translation in Delta hemoglobin gene. Other probability that justify this may attribute to competition in access to limited iron stores between Betha and Delta chain in HbA and A2 respectively. In few patients, minor changes in HbA2 levels may be from mild status of iron deficiency or early stage of the disease. Furthermore, concurrent lack of vitamin B12 and follate may increase percentage of HbA2 value. Therefore, treatment with iron supplements, especially in narrow limits can aid to differentiate challenging cases.

Keywords: Iron supplements; Electrophoresis; Thalassemia