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Age-specific cutoff in discriminating Iron deficiency anemia from beta-thalassemia traits

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To the editor

Differentiation of Iron deficiency anemia (IDA) from beta-thalassemia traits (BTT) is challenging because of similarity in red cell indices between these two disorders. This discrimination usually performs using different indices such as Shine and Lal, Mentzer, England and Fraser, Srivastava, Green and King, RBC, and RDW.[1-6] These indices formulate based on the red cell indices, so the difference in these indices may affect the clinical judgment that decided based on this tools. The values of red cell indices such as mean corpuscular volume (MCV) are differ between various age groups.[7]

In a study that was conducted on 323 individuals, the most validated indices were RBC and Shine and Lal in elder than 10 years group, while in older than 10 years patients were RBC and RDW.[8] Although the sample size was not enough and there is need for more supporting evidences, but the main idea of the difference exists. Some of clinicians may argued and claim that how many expert of related field were memorized or used these indices in daily practice or medical decision making? However, the validation and paying attention to this difference would be necessary in case of critical medical judgments, even the number is low.

Finally, according to the mentioned age-specific difference in red cell indices, we suggest to use it as a cutoff in medical decision making based on the discrimination indices. Hopefully, the experts in related field may pay attention to this suggestion and help in approving it.

References

1. Mentzer WC. Differentiation of iron deficiency from thalassemia trait. Lancet 1973;1:882.

2. Shine I, Lal S. A strategy to detect beta-thalassemia minor. Lancet 1977;1:692-4.

3. England JM, Fraser PM. Differentiation of iron deficiency from thalassemia trait by routine blood-count. Lancet 1973;1:449-52.

4. England JM, Fraser P. Discrimination between iron-deficiency and heterozygous-thalassemia syndromes in differential diagnosis of microcytosis. Lancet 1979;1:145-8.

5. Srivastava PC, Bevington JM. Iron deficiency and-or thalassemia trait. Lancet 1973;1:832.

6. Green R, King R. A new red cell discriminant incorporating volume dispersion for differentiating iron deficiency anemia from thalassemia minor. Blood Cells.1989;15(3):481-91; discussion 492-5.

7.Hermiston ML, Mentzer WC. A practical approach to the evaluation of the anemia child. Pediatr Clin North Am 2002; 49:877-91.

8. Fakher Rahim, Bijan Keikhaei, Better differential diagnosis of iron deficiency anemia from beta-thalassemia trait. Turk J Hematol 2009; 26: 138-45