Nitric oxide in beta-thalassemia minor: what factors contribute?

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To the Editor,

I read with great interest the recent publication by Bayraktar et al. [1] on nitric oxide (NO) in beta-thalassemia minor, in which they reached the conclusion that “These findings confirm that plasma NO levels in beta-thalassemia minor patients are decreased at the time of diagnosis.” Bayraktar et al. also noted the possible usefulness of NO level in assessing the prognosis and follow-up evaluation. There are some concerns with respect to the findings in this study. First, NO level can be disturbed by many factors. For example, the underlying pathophysiological conditions of the studied patients should be discussed. Some co-disorders and drug usage might alter the NO level among the patients. In addition, differences in food intake pattern or in nitrate level might be another important underlying condition that affects NO level [2]. Second, the quality control in laboratory analysis and sample collection must be addressed. Third, there is a concern regarding the proposal of Bayraktar et al. regarding the correlation between hemolysis and NO level in the studied patients. Indeed, hemolysis is not common in beta thalassemia minor. It remains doubtful whether the included cases in this study were accurately classified into the beta thalassemia minor group.

References


Author Reply

My response regarding the manuscript entitled “Nitric oxide in beta-thalassemia minor: what factors contribute?” is given below.

Firstly: In our patients, there were no co-disorders or drug usage. Patients with acute or chronic infections, chronic inflammatory diseases, heart diseases, and other anemias were not included in the study. Patients with similar underlying pathophysiological conditions of the studied patients should be discussed. Some co-disorders and drug usage might alter the NO level among the patients. In addition, differences in food intake pattern or in nitrate level might be another important underlying condition that affects NO level [2]. Second, the quality control in laboratory analysis and sample collection must be addressed. Third, there is a concern regarding the proposal of Bayraktar et al. regarding the correlation between hemolysis and NO level in the studied patients. Indeed, hemolysis is not common in beta thalassemia minor. It remains doubtful whether the included cases in this study were accurately classified into the beta thalassemia minor group.

References


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of physiological stress such as infection, pregnancy or surgery, and anemia may increase and present symptoms. Another possible explanation for hemolysis is the apparent decrease in spectrin content, including deficient or defective spectrin synthesis in thalassemia erythroid precursors or globin chain-induced membrane changes that lead to spectrin dissociation from the membrane [7].

Indeed, mild hemolysis occurs in beta thalassemia minor. In contrast, thalassemia intermedia and thalassemia major are probably associated with more severe degrees of hemolysis. It would have been preferable if the nitric oxide levels of the patient group were also compared with thalassemia major patients or Hb S patients as a positive control. Our small study population consisted of patients diagnosed with beta thalassemia minor. Further studies are needed in a large number of patients.

Sincerely,
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References