Cerebral artery velocity determined by transcranial doppler ultrasonography in patients with β-thalassemia intermedia compared to β-thalassemia major


¹Hematology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.
karimim@sums.ac.ir

Abstract

We aimed to compare cerebral artery velocity and relevant clinical factors in patients with β-thalassemia intermedia (β-TI), β-thalassemia major (β-TM), and healthy individuals. For this study, 60 patients with β-TM and 64 with β-TI were randomly selected. Sixty healthy adults comprised the control group. Time average maximum mean velocity (TAMMV) was measured in large cerebral arteries with transcranial Doppler (TCD) ultrasonography. In all arteries, TAMMV was significantly higher in the β-TI group than that of β-TM or controls (P < .001). Patients with β-TM had significantly higher TAMMV than controls in most arteries evaluated (P < .001). Overall, the lack of regular blood transfusions, splenectomy, and lower age (to a lesser extent) was found to be independent influencing factors contributing to high cerebral artery velocities. Further detailed longitudinal studies are needed to confirm these results and to determine the risk of silent infarction and stroke in patients with thalassemia and abnormal TCD, with particular focus on patients with β-TI.

KEYWORDS:

cerebral artery velocity; thalassemia intermedia; thalassemia major; transcranial Doppler ultrasonography