

Thesis Title      The Interaction between Beta Thalassemia Hemoglobin E  
Red Blood Cells and Endothelial Cell in vitro.  
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### ABSTRACT

In vitro experiment using endothelial monolayer from human umbilical cord vein was done to evaluate the binding effect of thalassemic red cells. Eighty beta thalassemia hemoglobin E patients (49 with non-splenectomized and 31 with splenectomized) were included in this study. Thalassemic red cells adhere to cultured endothelial cell at a greater extent than the normal red cells did. (P-value < 0.05) Heat labile factor in plasma enhanced the binding of red cells to endothelial cells. Thalassemic platelets from autologous platelet rich plasma enhanced the red cell-endothelial cell interaction. This enhancement was not shown in the experiment using normal platelets. Bilirubin at concentration of 5 mg% in the complete medium also enhanced red cell binding to EC. Iron chelating drug (Desferrioxamine) treated endothelial cells caused decreased in the number of bound red cells to endothelial cells. The effect dose of Desferal was 20  $\mu$ M. The abnormalities in both red cells and endothelial cells may cause abnormal interaction between red cells and endothelial cells in thalassemia patients. This abnormal interaction may result in complications of the disease i.e. lung thrombosis and leg ulcers in  $\beta$ -thal/Hb E patients.