Earlier detection of glomerular dysfunction in Beta-Thalassemia Major Patients

Waseem F Al-Tameemi
Al-Nahrain University, Iraq

Background: Chronic transfusions program in β-Thalassemia patients will inevitably lead to iron overload with a significant morbidity and mortality.

Glomerular Filteration: Rate(GFR) is progressively declined in relation to iron overload as well as chronic anemia.

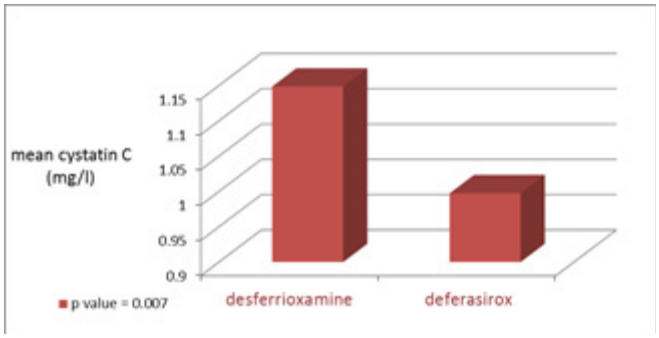
Objective: Objective is to define levels of Cystatin C in transfusion dependent β-Thalassemia Major patients as a sensitive marker for detection of earlier glomerular dysfunction in addition to understand the effect of iron overload ,chelating therapy and hepatitis infection.

Patients and method: A cross sectional study conducted at Al-Basrah hemoglobinopathy Centre for the period from September 2017 to January 2018 to enroll 75 β-Thalassemia Major patients . Data collected included duration of the disease, total transfusion requirement, details of chelation therapy and its therapeutic index. In addition to blood urea, serum creatinine and Cystatin C with Estimated glomerular filtration rate (eGFR).

Results: The mean Cystatin C was 1.075mg/l where 66.6% of patients had abnormal renal function which is higher proportion than those with renal (42.6%) detected according to serum creatinine level

Cystatin C was significantly higher in patients who received desferrioxamine as compared to those received deferasirox (p =0.007), in accordance with GFR which is significantly higher in patients receiving the latter chelation therapy (p=0.009). A significant inverse relationship between Cystatin C, and GFR, while positive relationship between ferritin and Cystatin C (p= 0.0001, 0.001 respectively).

Conclusion: Cyctatin C is better for detection and monitoring of glomerular dysfunction in B thalassemia major patient which is already not uncommon complications for the disease and iron chelation therapy.



Publications

1. Ali BA, Mahmoud AM. Frequency of glomerular dysfunction in children with beta thalassaemia major. Sultan Qaboos Univ Med J 2014;14:e88.

2. Hannemann A, Friedrich N, Dittmann K, et al. Age-and sex-specific reference limits for creatinine, cystatin C and the estimated glomerular filtration rate. Clin Chem Lab Med 2012;50: 919-26.

3. Papassotiriou I, Margeli A, Hantzi E, et al. Cystatin C levels in patients with β- thalassemia during deferasirox treatment. Blood Cells Mol Dis 2010;44: 152-5.