SERUM CYSTATIN-C VERSUS URINARY ALBUMIN CREATININE RATIO AS AN EARLY INDICATOR OF KIDNEY DYSFUNCTION IN CHILDREN AFFECTED BY B-THALASSEMIA MAJOR.

Abstract:

Background: β-thalassemia is one of the most common hereditary diseases in Egypt. The leading causes of renal dysfunction in thalassemic patients include chronic anemia, iron overload from repeated blood transfusions, and kidney-induced damage from the use of iron chelators.

Objective: We aimed to investigate the association of serum cystatin-C in children with β-thalassemia major and albumin/creatinine (A/C) ratio and to assess its accuracy as an early indicator of nephropathy.

Methods: This case-control study enrolled 41 children diagnosed as β-thalassemia major on chelation therapy and 41 healthy, age- and sex-matched controls. The kidney function was assessed using blood urea and serum creatinine to calculate the glomerular filtration rate (eGFR) by Schwartz formula, A/C ratio, and serum cystatinC.

Results: We found that 26.8 % of β-thalassemia patients had kidney dysfunction (eGFR below 90 mg/min/1.73 m2). These patients were significantly different from thalassemic patients with normal eGFR regarding the frequency of blood transfusion (P-value < 0.0001), duration of chelation therapy (P-value = 0.002), blood urea (Pvalue = 0.001), serum creatinine (P-value < 0.0001), A/C ratio (P-value < 0.0001), serum cystatin-C (P-value = 0.009), and eGFR (P-value < 0.0001).

Conclusion: Serum cystatin-C might be a good diagnostic test for early detection of glomerular dysfunction like A/C ratio and may precede it.