

Serum Beta-2-microglobulin as a Marker of Renal Dysfunction in Pediatric Patients with Sickle Cell Disease

Thesis

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دراسة ميكروغلوبين بيتا-٢ كمؤشر على خلل وظائف الكلى فى الأطفال المصابين بالأنيميا المنجلية

رسالة مقدمة من
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LIST OF ABBREVIATIONS

ACR	Albumin:creatinine ratio
ACS	Acute chest syndrome
ASS	Acute splenic sequestration
AVN	Avascular necrosis of bone
β2M	Beta 2-Microglobulin
CEC	Circulating endothelial cells
CKD	Chronic kidney diseases
CSSCD	Cooperative Study of Sickle Cell Disease
DNMT	DNA methyltransferase
ESAs	Erythropoiesis-stimulating agents
GFR	Glomerular filtration rate
GVHD	Graft-versus-host disease
HbF	Fetal hemoglobin
HbS	Sickle hemoglobin
HIC	Hepatic iron content
HJB	Howell-Jolly Body
HLA	Human leukocyte antigen
HPLC	High-performance liquid chromatography
ICAM	Intercellular adhesion molecule
IEF	Isoelectric focusing
ISCs	Irreversibly sickled cells
NO	Nitric oxide.
PCR	Protein:creatinine ratio
RBCs	Red blood cells
RPN	Renal papillary necrosis
RPN	Renal papillary necrosis
SCA	Sickle cell anemia
SCCLD	sickle cell chronic lung disease
SCD	Sickle cell disease
SCN	Sickle Cell Nephropathy
SCT	Sickle cell trait
SNPs	Single nucleotide polymorphisms
TCD	Transcranial Doppler ultrasonography
TM	Thalassemia major
UTI	Urinary tract infection
VCAM	Vascular cell adhesion molecule
VEGF	Vascular endothelial growth factor
VOC	Vaso-occlusive crisis
VUR	Vesico-ureteral reflux

ABSTRACT

A retrospective study conducted in Pediatric Hematology Clinic, New Children Hospital, Cairo University, from January to April 2013, to assess beta-2- microglobulin (B2M) levels in 68 Egyptian children, aged 1 to 18 years. Patients were presented in Hematology Clinic with a steady state of SCD. Their mean serum B2M was normal (1.92 ± 0.757 ug/ml). Although, serum B2M was within the reference range, cases had significantly lower serum B2M to the control group. Serum level of B2M was not affected by gender and our data clearly demonstrate age independency for serum concentrations of B2M. We concluded that serum B2M is not a good marker in the detection of early stages of SCD nephropathy in children. The study recommends further investigation on a larger scale to determine the magnitude of the problem in Egypt.

Key words: SCD, B2M, children, renal diseases.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

بسم الله الرحمن الرحيم

" سنريهم آياتنا في الأفاق وفي أنفسهم حتي يتبين لهم
أنه الحق ، أولم يكف بربك أنه علي كل شيء شهيد "

صدق الله العظيم

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INTRODUCTION

AIM OF THE WORK

**REVIEW
OF
LITERATURE**

SUBJECTS
AND
METHODS

RESULTS