

Serum and Urinary Level of High Mobility
Group Box 1 Protein in Patients with
Lupus Nephritis

Thesis

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degree In Internal Medicine**

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وَقُلْ اَعْمَلُوا فَسَيَرَى اللّٰهُ
عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ

صَلَّى
الْعِظَمَاءِ



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List of Abbreviations

APS	: Antiphospholipid syndrome
AVN	: Avascular necrosis
AZA	: Azathioprine
BAFF	: B cell activating factor
CIcs	: Circulating immune complexes
CRR	: Complete renal response
CSA	: Cyclosporine
CYC	: Cyclophosphamide
ERS	: Estrogen receptors
GBM	: Glomerular basement membrane
HMGB1	: High Mobility Box protein 1
IL1	: Interleukin 1
IL5	: Interleukin 5
IVIG	: Intravenous immunoglobulin
LDGS	: Low density granulocytes
LN	: Lupus nephritis
MiRNA	: Micro RNA
MMF	: Mycophenolate
NETS	: Neutrophil extra cellular traps
PDCS	: Plasmacytoid dendritic cells
PRR	: Partial renal response
PTECS	: Proximal tubular epithelial cells

RAGE	:	Receptor for advanced glycation end products
RTX	:	Rituximab
SLE	:	Systemic lupus erthyematosus
SNP	:	Single nucleotide polymorphism
TGFB	:	Transforming growth factor beta
Th2	:	T helper cells
TLRS	:	Toll like receptors
TNF	:	Tumor necrosis factor

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Abstract:

Background: High mobility group box 1 protein (HMGB1) is a nuclear DNA binding protein acting as a pro-inflammatory mediator following extracellular release. HMGB1 has been increasingly recognized as a pathogenic mediator in several inflammatory diseases. Elevated serum and urinary levels of HMGB1 have been detected in autoimmune diseases in particular Systemic lupus erythematosus (SLE).

Aim of the Work: the aim of this study was to assess serum and urinary levels of high mobility group box 1 protein in correlation to renal histopathology, disease activity and organ damage in systemic lupus patients.

Patients and Methods: The study was a cross sectional and prospective study carried out on 25 patients with proved active lupus nephritis, all patients were subjected to the following: history taking, clinical examination, CBC, ESR urine analysis, protein/creatinine ratio, C3, C4, assessment of disease activity using Bilag score, serum and urinary levels of High mobility box protein 1 both at the start of the study and after 6 months of follow up and renal biopsy at the beginning of the study.

Results: Levels of serum and urinary High Mobility Box protein 1 were high among the studied patients at base line as regard it's reference range, with a significant difference when compared to their levels after follow up. After follow up the study revealed a positive correlation between disease activity using BILAG score and serum High Mobility box protein 1 also the study showed significant association/ correlation between degree of severity of nephritis and levels of serum HMGB1 finally an association was found between levels of urinary High Mobility Box protein 1 and class v of lupus nephritis.

Conclusion: HMGB1 levels (serum and or urinary) are high in SLE patients with nephritis compared to reference range. There is an association / correlation not only between HMGB1 and disease activity in SLE patients but also between it and renal disease activity, severity and class.

Key words: C3, C4, HMGB1, pr/creat ratio, ESR