ALTERNATION IN INTERLEUKIN-8 AND CHEMOTACTIC FACTORS IN RENAL FAILURE AND DIALYSIS PATIENTS

Thesis
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Master Degree in Clinical and Chemical Pathology

By

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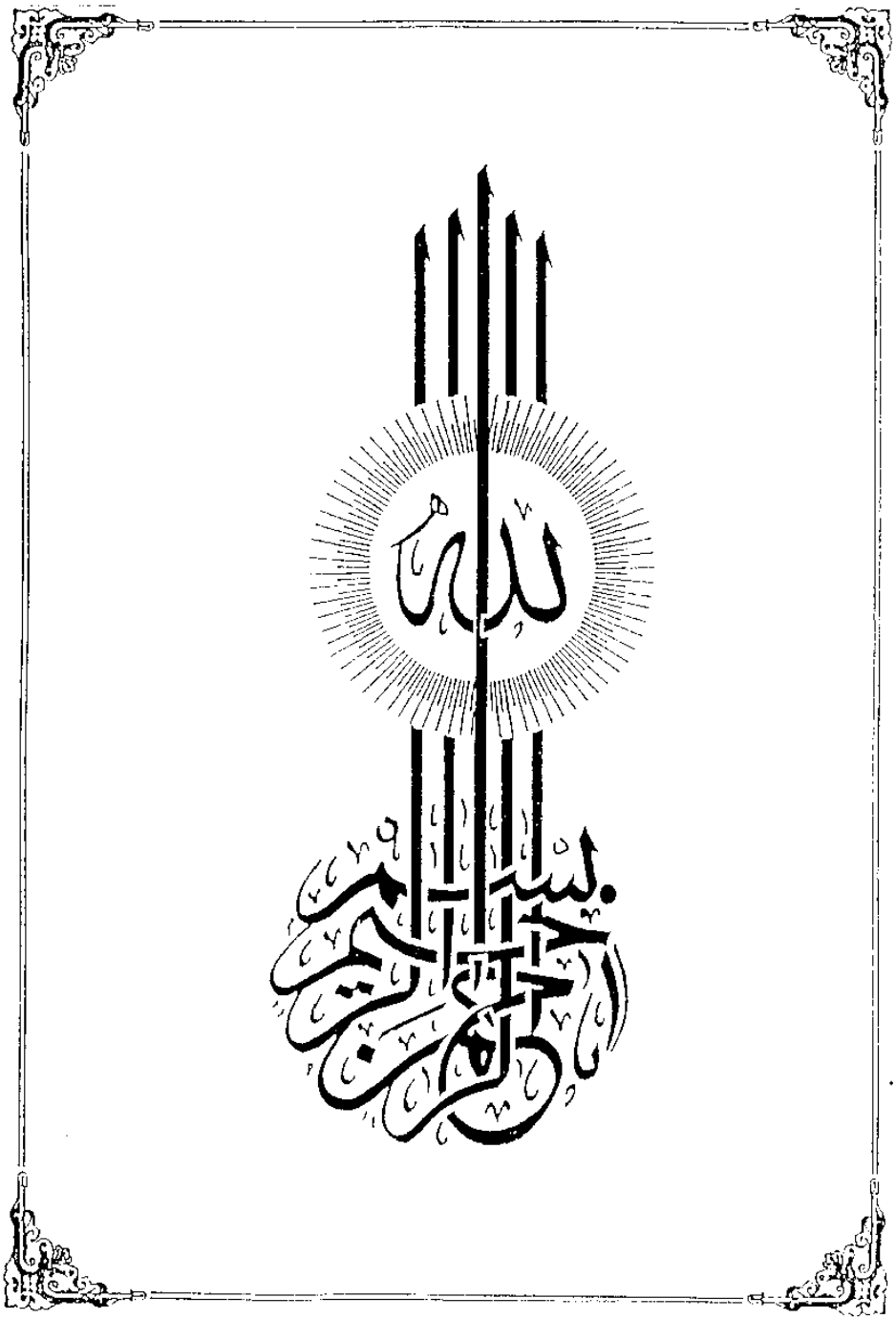
بسم الله الرحمن الرحيم .

﴿ سُبحَانكَ لاعِلمَ لَنآ إلاّ مَاعَلّمتَنآ
إنّكَ أَنتَ العَلِيمُ الحَكِيمُ . ﴾

سورة البقرة آية ٣٢



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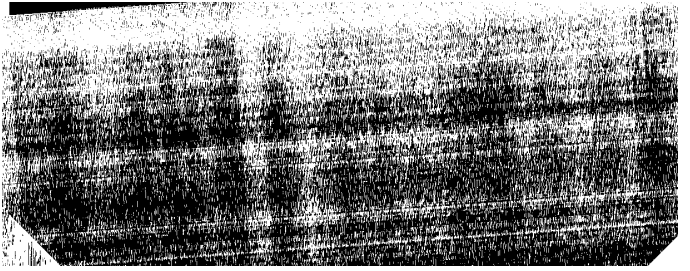
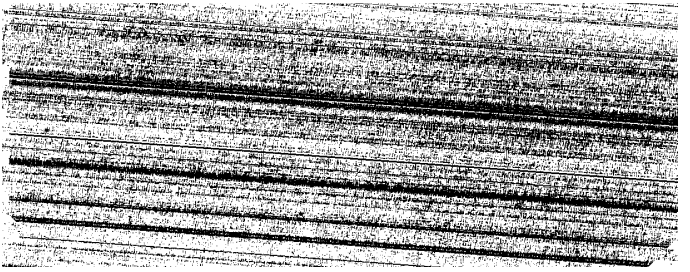
- ATP: Adenosine triphosphate.
- BPI: Bactericidal permeability increasing protein.
- B-TG: Beta thromboglobulin.
- C: Complement.
- Ca: Calcium.
- CAPD: Continuous ambulatory peritoneal dialysis.
- CAMP: Cyclic adenosine monophosphate.
- CRF: Chronic renal failure.
- CTAP: Connecting tissue activating protein.
- DIP: Degranulation inhibitory protein.
- FMLP: Formyl methionyle leucyle phenylalanine.
- Gamma-IFN : Gamma interferon.
- GIP: Granulocyte inhibitory protein.
- G-Protein: Guanine nucleotide binding protein.
- GRO: Growth related oncogene.
- HCC: Hemofiltrate cc chemokine.
- HD: Hemodialysis.
- ICAM: Intracellular adhesion molecule .
- Ig: Immunoglobulin.
- IL: Interleukin.
- IP-10: Inducible gene-protein-10.
- LFA: Lymphocyte functional associated antigen.
- LPS: Lipopolysaccharide.
- Ltn: Lymphotactin.

- LTB-4: Leukotriene B4.
- MAC: Membrane attack complex.
- MCP-1: Monocyte chemoattractant protein-1.
- MCSF: Macrophage colony stimulating factor.
- MIP-2: Macrophage inhibitory protein-2.
- MW: Molecular weight.
- NAP-2: Neutrophil activating peptide.
- PAF: Platelet activating factor.
- PAN: Polyacrylonitrile.
- PBMC: Peripheral blood mononuclear cells.
- PBL: Peripheral blood leukocytes.
- PDGF: Platelet derived growth factor.
- PHA: Phytohemagglutinin.
- PG: Prostaglandin.
- PMA: Phorbol myristate acetate.
- PMMA: Polymethyl methacrylate.
- PNLs: Polymorphonuclear leukocytes.
- PTH: Parathyroid hormone.
- PWM: Pokeweed mitogen.
- RC: Regenerated cellulose.
- SDF: Stromal cell derived factor.
- TGF-B: Transforming growth factor beta.
- TNF: Tumor necrosis factor.
- VCAM: Vascular cell adhesion molecule.





INTRODUCTION

During hemodialysis (HD), circulating monocytes are exposed to various stimulatory factors such as the components that comprise dialysis instruments, fragments from complement activation and contaminating endotoxins. Monocyte stimulation by these factors leads to the production of cytokines. Increase in proinflammatory cytokines may possibly mediate the HD-related symptoms such as fever, hypotension, fatigue, myalgia, anorexia and osteopenia **(Descamps and Herbelin, 1993)**.

IL-8 is a specific neutrophil degranulator **(Willems et al., 1989)** that is predominantly released by monocytes after stimulation of peripheral blood leucocytes with lipopolysaccharide (LPS). It attracts and activates polymorphonuclear leucocytes (PMNL) **(Yoshimura et al., 1987a)**.

Various polymorphonuclear disorders have been reported to occur in chronic renal failure with alternations in chemotactic response **(Lucchi et al., 1989)**. The process of chemotaxis, phagocytosis, oxidant generation and lysosomal degranulation are central to PMN function. These functions have been reported as augmented, normal or impaired in patients with chronic renal failure **(Koziol etal., 1989)**.