PHAGOCYTIC FUNCTION IN RENAL FAILURE BEFORE AND AFTER HEMODIALYSIS

A Thesis
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Master Degree in Pediatrics

By

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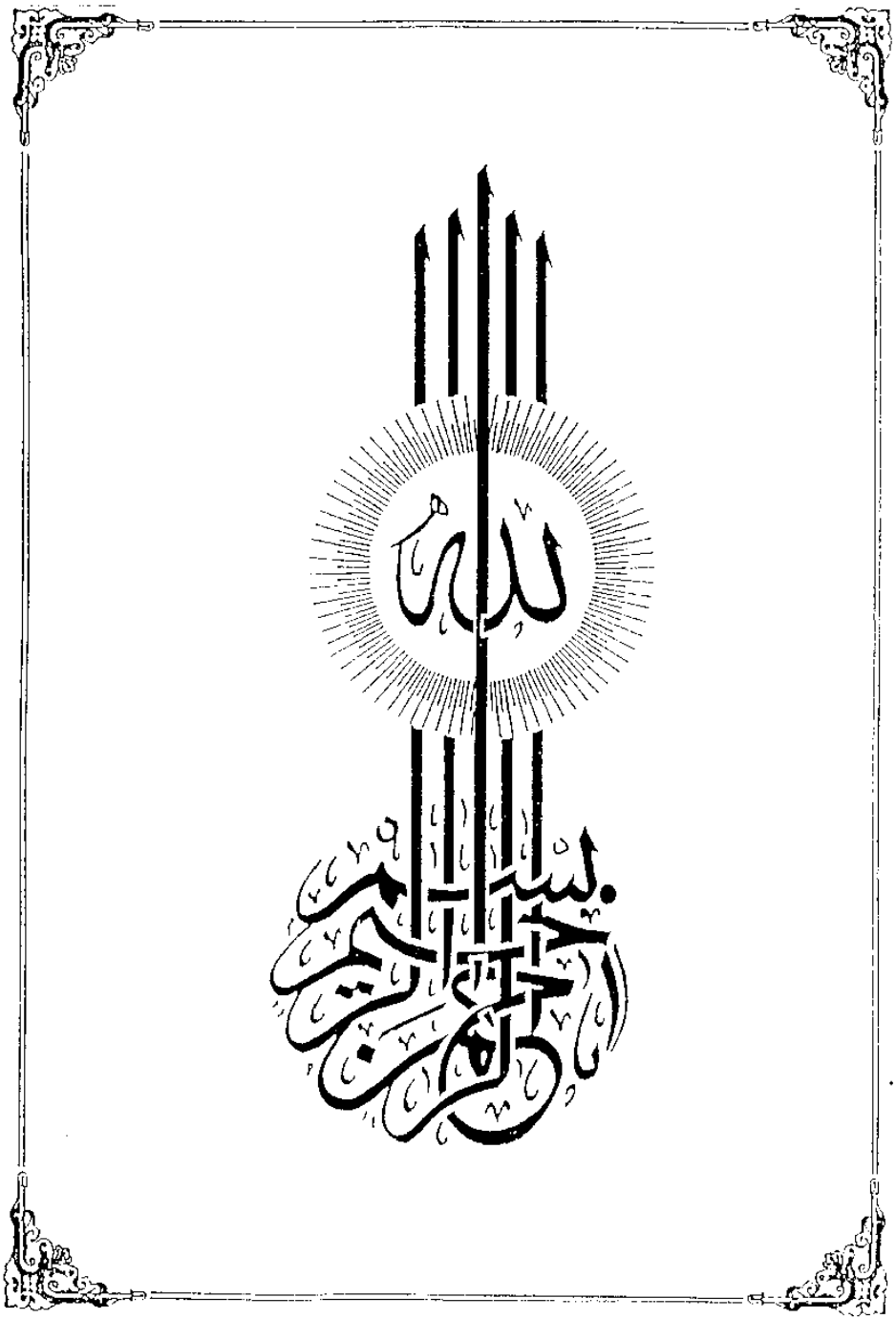
بسم الله الرحمن الرحيم

«وَقُلِ اعْمَلُوا فَسَيَرَى اللَّهُ
عَمَلَكُمْ وَرَسُولُهُ وَالْمُؤْمِنُونَ»

صدق الله العظيم

(سوره التوبه
ايه ١٠٥)



To My Family

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LIST OF ABBREVIATIONS

ARE	:	Acute renal failure
AV	:	Arteriovenous
BUN	:	Blood urea nitrogen
CAPD	:	Continuous ambulatory peritoneal dialysis
CRF	:	Chronic renal failure
GFR	:	Glomerular filtration rate
HBSS	:	Hank's balanced salt solution
HD	:	Hemodialysis
K^+	:	Potassium
LI	:	Lytic index
PD	:	Peritoneal dialysis
PF	:	Phagocytic function
PI	:	Phagocytic index
PMNLs	:	Polymorphonuclear leucocytes
PTH	:	Parathyroid hormone
RF	:	Renal failure

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Introduction and Aim of the Work

INTRODUCTION

The association between uremia and immunosuppression is firmly established in the minds of many clinicians.

Lawrence's essay in 1965 describes uremia as "Nature immunosuppressive device", this report coupled with the fact that infection is a frequent complication and cause of death in patients with renal failure, and have led to the belief that the uremic process itself impairs immunity and thus predisposes the host to infection.

Montgomerie et al., , study in 1968, showed that up to 60% of patients with chronic renal failure suffer from a serious infection, which, in 38% of cases contribute to death.

Phagocytosis is a major aspect of the immunological system in the host.

The exact role of phagocytosis in chronic renal failure is the subject of many controversy. Some authors reported a normal phagocytic function, while others reported a depressed phagocytosis. The effect of treatment including hemodialysis on the phagocytic function is conflicting.

AIM OF THE WORK

The aim of this work is to study the phagocytic function of the patients with chronic renal failure and to search for the effect of hemodialysis on its function.

Review of Literature

RENAL FAILURE

I ACUTE RENAL FAILURE

Definition:

Acute renal failure (ARF) is the rapid deterioration or cessation of renal function in patients with previously normal kidney **(Hodson et al., 1978)**.

There is abrupt decline in the glomerular filtration rate (GFR) sufficient in magnitude to result in retention of nitrogenous wastes and disturbance of water and electrolyte balance **(Ikuma et al., 1988)**.

Causes of acute renal failure:

The specific causes of ARF have been classified as Pre renal, renal and post-renal causes **(BerGstein, 1992)**.

Causes of ARF (quoted from BerGstein (1992)

Pre-renal	Renal	Postrenal
Hypovolemia Hemorrhage Gastrointestinal losses Hypoproteinemia Burns Renal or adrenal disease with salt wasting	Glomerulonephritis Post streptococcal Lupus erythematosus Membrane proliferative Idiopathic rapid progressive Anaphylactoid purpura	Obstructive uropathy Ureteropelvic junction Ureterocele Urethral valves Tumour
Hypotension Septicemia Disseminated intravascular coagulopathy Hypothermia Hemorrhage Heart failure	Localised intravascular coagulopathy Renal vein thrombosis Cortical necrosis Hemolytic-uremic syndrome	Vesico ureteral reflux Acquired Stones Blood clot
Hypoxia Pneumonia Aortic clamping Respiratory distress syndrome	Acute tubular necrosis Heavy metals Chemicals Drugs Hemoglobin,Myoglobin Shock Ischemia	
	Acute interstitial nephritis Infection Drugs (nephrotoxicity)	
	Tumours Renal parenchymal infiltration Uric acid nephropathy	
	Developmental abnormalities Cystic disease.Hypoplasia-dysplasia	
	Hereditary nephritis	