

# **RHABDOMYOLYSIS IN CHILDREN WITH CHRONIC RENAL FAILURE**

## **THESIS**

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بسم الله الرحمن الرحيم

« قالوا سبحانك لا علم لنا إلا ما علمتنا إنك أنت العليم الحكيم . »

صلى الله العظيم

(سورة البقرة ، الآية ٢٢)



***TO ...***  
***MY PARENTS***



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## **ABBREVIATIONS**

ADH	Antidiuretic hormone
AIDS	Acquired immune deficiency syndrome
ATP	Adenosine triphosphate
BUN	Blood urea nitrogen
Ca	Calcium
CAPD	Continuous ambulatory peritoneal dialysis
CPK	Creatine phosphokinase
CRF	Chronic renal failure
ECF	Extracellular fluid
ECG	Electrocardiogram
ESRD	End-stage renal disease
GFR	Glomerular filtration rate
Hb	Hemoglobin
Hct	Hematocrit
IGF <sub>1</sub>	Insulin like growth factor 1
IGF <sub>2</sub>	Insulin like growth factor 2
K	Potassium
MCV	Mean corpuscular volume
Na	Sodium
P	Phosphorus
Plt	Platelet
PTH	Parathyroid hormone
RBCs	Red blood cells
SD	Standard deviation
SLE	Systemic lupus erythematosus
UTI	Urinary tract infection
WBCs	White blood cells

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# ***Introduction and Aim of the Work***

## INTRODUCTION AND AIM OF THE WORK

Rhabdomyolysis is the breakdown of skeletal muscle cells with liberation of their contents into the circulation. Therefore, it is characterized by marked elevation of serum creatine phosphokinase level and serum and urine myoglobin, potassium and phosphate (*Brumback et al.*, 1992). As rhabdomyolysis is usually associated with clearance of serum myoglobin into the urine, serum myoglobin should be rapidly estimated during rhabdomyolysis for the evaluation of acute muscle damage (*Holmgren and Valberg*, 1992).

Rhabdomyolysis can induce acute myoglobinuric renal failure, and renal biopsy in this condition can confirm the presence of tubular myoglobin casts and acute tubular necrosis (*Murugasu et al.*, 1992). However, its relation to chronic renal failure is less clear. *Muto et al.* (1987) reported a case of progressive and fatal rhabdomyolysis in a man who was under hemodialysis for 8 years. He developed severe lactic acidosis and hyperkalemia. The rhabdomyolysis was thought to be virus-induced in that case. Myoglobin levels are also known to be raised in cases of decreased renal elimination and in dialysis disequilibrium (*Chamberlain*, 1991).

With this as a background, this study is aimed to outline the magnitude of rhabdomyolysis in children with chronic renal failure in relation to other forms of metabolic derangement. The effect of hemodialysis on serum myoglobin levels and the repercussions of this problem on the management strategies are meant to be evaluated.