EFFECT OF UREA REBOUND ON ASSESSMENT OF DIALYSIS ADEQUACY

THESIS
SUBMITTED FOR PARTIAL FULFILMENT
FOR THE MASTER DEGREE IN
INTERNAL MEDICINE
By

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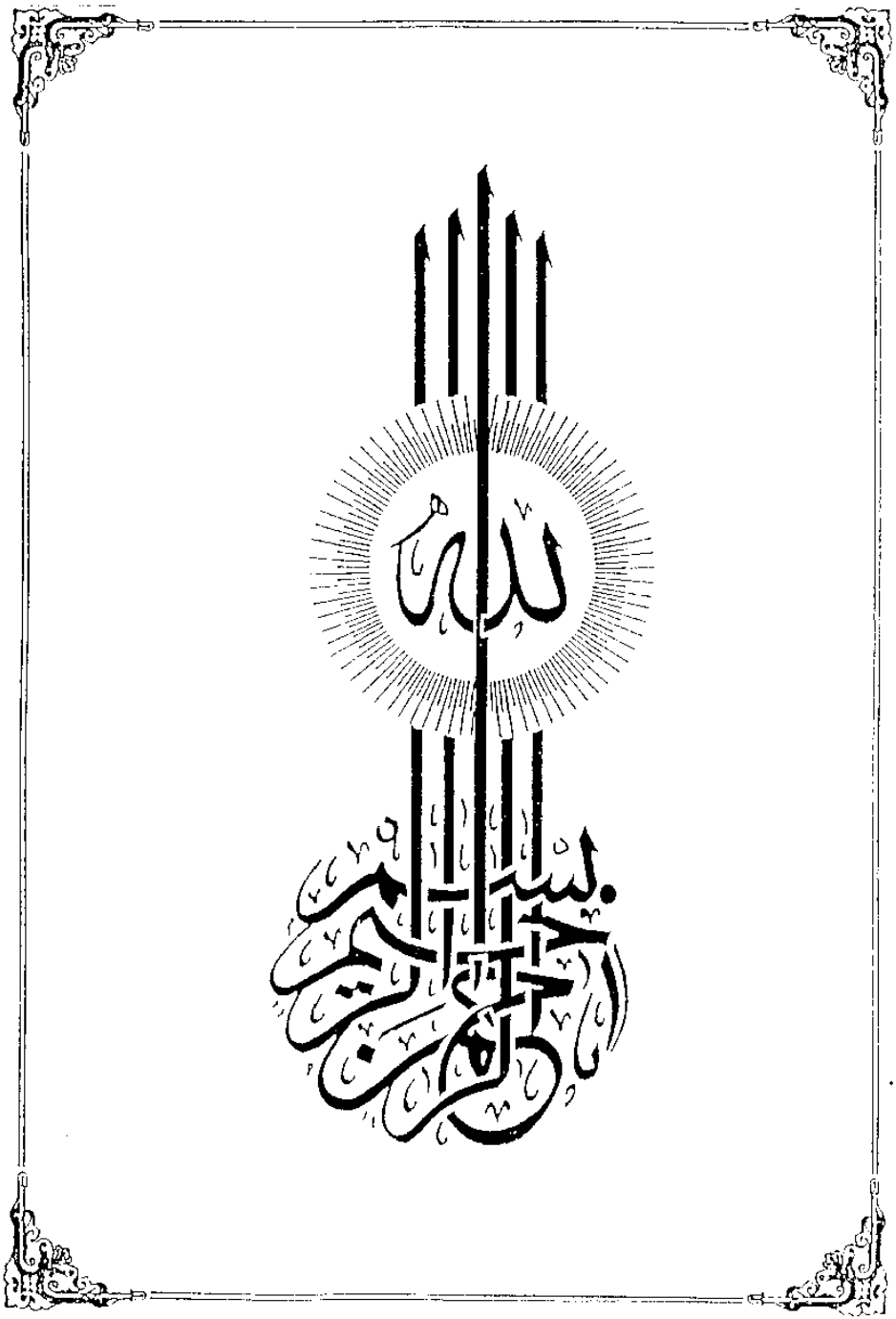

ACKNOWLEDGMENT

I would like to express my utmost thanks and highest appreciation to Prof. Dr. Wahid Mohamed El-Saeed, Prof. of Internal Medicine, Faculty of Medicine, Ain Shams University. His valuable help, precious advice and continuous encouragement were the driving force for the completion of this work. It is a great honour to work under his guidance and supervision.

I'm greatly indebted to Dr. Mohamed Ali Mohamed Ibrahim, Assistant Prof. of Internal Medicine, Faculty of Medicine, Ain Shams University. His valuable guidance and sincerity support any appreciation.

My deep respects and thanks to Dr. Essam Nor El-Din, Lecturer of Internal Medicine, Faculty of Medicine, Ain Shams University. I want to express my obligation and gratitude for his guidance and sincere help in this work.

LIST OF ABBREVIATIONS

A kt/v:	Approximate kt/v
BUN:	Blood urea nitrogen
Dx:	Dialysis
EDTA:	European Dialysis and Transplant Association
Epo:	Recombinant human erythropoietin
ESRD:	End stage renal disease
G:	Generation rate
ICV:	Intracellular volume
KoA:	Dialyzer blood urea water clearance in vitro
kt/v:	k: urea clearance of dialyzer t: times of dialysis session v:total distribution volume of urea
Kw:	Dialyzer clearance in vivo
L kt/v:	Logarithmic kt/v
NCDS:	National Co-operative Dialysis Study
PCR:	Protein catabolic rate
PCRn:	Protein catabolic rate, normalized to lean body weight
PDUR:	Post-dialysis urea rebound
PGE_2:	Prostaglandin E_2
PRU:	Percent urea reduction
R1:	Post blood urea at 15 minutes after Dx/pre-blood urea
R2:	Post blood urea at 30 minutes after Dx/pre-blood urea
R3:	Post blood urea at 60 minutes after Dx/pre-blood urea
Ro:	Post blood urea at 3 minutes after Dx/pre-blood urea
RPM:	Revolutions per minute
TAC urea:	Time Average of urea Clearance
TAC:	Time averaged BUN clearance
TBW:	Total body water
UKM:	Urea kinetics model
URR:	Urea reduction ratio
X:	Distribution coefficient

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ABSTRACT

The low urea concentration immediately post-dialysis leads to an overestimation of kt/v based on single pool urea kinetic models. The aim of this study is to assess the effect of urea rebound on calculation of kt/v and study the effect of different factors on it. 20 patients on regular hemodialysis were subjected for calculation of kt/v by pre-dialysis blood urea sample and serial samples of blood urea at 3, 15, 30, 60 minutes post dialysis.

Results of this work showed that there were a reduction in kt/v values approached 16% after 30 minute post dialysis and its maximum at 60 minutes post dialysis. These results were demonstrated in calculated kt/v by the logarithmic method kt/v = -Ln(R-0.03)+[(4-3.5R)x(uF/w)] (ANOVA = 2.1860, $p<0.05$). Also, the same results was demonstrated in calculated kt/v through the relationship between R (post/pre urea ratio) and uF/wt (ANOVA = 2.15) ($p<0.05$). There were no significant difference in values of kt/v obtained by the two methods at 3, 15, 30, 60 minutes post dialysis ($p>0.05$). The urea rebound is not correlated with different factors such as age, sex, weight, height, volume, hours per session, frequency of sessions and ultrafiltration.

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