PRESCRIPTION IN REGULAR HEMODIALYSIS PATIENTS IN QALUBIA GOVERNORATE (SECTOR B1)

Thesis

Submitted for Partial Fulfillment of
Master Degree in Internal Medicine

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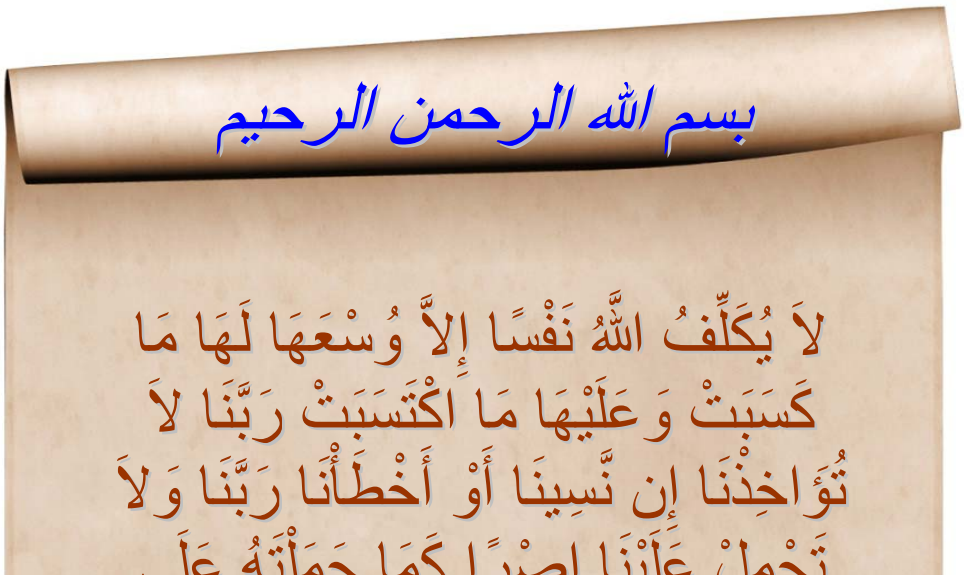
2013



Acknowledgement

First and foremost, I thank **ALLAH** *for helping and guiding me in accomplishing this work.*

I would like to express my deepest thanks and profound gratitude to dear Prof. Dr. Abd El Basset El –Shaarawy Abd El Azim *Professor of Internal Medicine & Nephrology Faculty of Medicine - Ain Shams University*

Special thanks are due to Dr. Hayam Moahmed Aref *Assistant Professor of Internal Medicine & Nephrology Faculty of Medicine - Ain Shams University*

I would like to thank the patients and every person participated in this work

Last but definitely not the least, I would like to thank my great kind family for always being there for me, they supported me all through my life.

Mohammed Abd E1 Aleem

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List of Abbreviations

Abb.	Full term
AAMI	American Association of Medical Instrumentations
AVF	Arteriovenous fistula
AVG	Arteriovenous graft
BFR	Blood flow rate
BUN	Blood urea nitrogen
CAPMAS	Central Agency for Mobilization and Statistics
CHF	Congestive heart failure
CKD	Chronic kidney disease
CRP	C-reactive protein
CRRT	Continuous renal replacement therapy
CSN	Canadian Society of Nephrology
CVD	Cardiovascular disease
DFR	Dialysate flow rate
DM	Diabetes mellitus
DOPPS	Dialysis Outcomes and Practice Patterns Study
DOQI	Dialysis Outcome Quality initiative
EBPG	European Best Practice Guidelines
ERA-EDTA	European renal association and European Dialysis and transplant association
ERBP	European Renal Best Practice
ESRD	End Stage Renal Disease
GFR	Glomerular filtration rate
Hb	Hemoglobin
HD	Hemodialysis
HDF	Hemodiafiltration
HF	Hemofiltration
HTN	Hypertension

List of Abbreviations (Cont…)

Abb.	Full term
JSN	Japanese Society of Nephrology
K/DOQI	Kidney Disease Outcome Quality Initiative
KDIGO	*Kidney disease improving global outcomes*
KoA	Mass transfer area coefficient
KUF	The ultrafiltration coefficient
LMW	Low molecular weight
LVH	Left ventricular hypertrophy
MOHP	Ministry of Health and Population
NIH	National Institutes of Health
NKF	National Kidney Foundation
OU	Osmotic ultrafiltration
PAN	Polyacrylonitrile
PD	Peritoneal dialysis
PMMA	Polymethylmethacrylate
PS	Polysulfone
PTH	Parathyroid hormone
Qb	Blood flow
Qd	Dialysate flow
QOL	Quality of life
RBCs	Red blood cells
SHPT	Secondary Hyperparathyroidism
SPVV	Single-pool variable-volume
TC	Tunneled catheter
UF	Ultrafiltration
URR	Urea reduction ratio
USRDS	United States Renal Data System

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INTRODUCTION

Studies examining the link between research evidence and clinical practice have consistently shown gaps between the evidence and current practice. Some studies in United States suggest that 30% - 40% of patients do not receive evidence-base care, while in 20% of patients care may be not needed or potentially harmful. However, relatively little information exists about how to apply evidence in clinic practice, and data on the effect of evidence- based guidelines on knowledge uptake, process of care or patient outcome is limited **(Locatelli et al., 2004).**

In recent years, specific clinical guidelines have between developed to optimize the quality of anemia management secondary to chronic kidney diseases (CKD). As a result, the National Kidney Foundation Kidney Disease Outcome Quality Initiative (K\DOQI) guidelines and the Renal European Dialysis and Transplantation Association best practice guidelines have been published in USA & Europe. Therefore; clinical practice help individual physician and physician as a group to improve their clinical performance and thus raise standard of patient care towards optimum levels, They may also help to insure that all institution provide an equally good base line standard of care **(Cameron, 1999).**

Guidelines practiced on anemia and actual practices are much different with different places and patients according to treatment. Moreover, in individual countries

and individual units within countries local circumstances relating to economic conditions; organization of health care delivery or even legal constraints may render the immediate implementation of best practice guidelines difficult or impossible. Nevertheless, they provide a goal against which progress can be measured **(Locatelli et al., 2004).**

Dialysis Outcomes and Practice Patterns Study (DOPPS) has observed a large variation in anemia management among different countries. The main hemoglobin concentration in hemodialysis patient varied widely across the studied countries ranging between 8g/dl to 11g/dl. The percentage of prevalent hemodialysis patient receiving erythropoietin stimulating agent (ESA) has increased from 75% to 83%. The percentage of HD patient receiving iron varies greatly among DOPPS countries range from 38% to 89%, **(Locatelli et al., 2004).**

There are challenges in implanting clinical guidelines in medical practice. Overall DOPPS data which show that, despite the availability of practice guidelines for treatment of renal anemia, wider variation in anemia management exists as gap between what is recommended by the guidelines and is accomplished in every day clinical practice. Compliance with clinical guidelines is an important indicator of quality and efficacy of patient care at the same time their adaptation in clinical practice may be initiated by numerous factors including, clinical experts,

patient performance, constrains of public health policies, community standard, budgetary limitation and methods of feeding back information concerning current practice **(Cameron, 1999).**

AIM OF THE WORK

To study the patterns of current clinical practice in hemodialysis prescription in regular hemodialysis patients in Qalubia Governorate Sector (B1), Egypt and to compare these patterns with the latest standard international guidelines in hemodialysis prescription, stressing on anemia, bone disease management and adequacy of dialysis.

CHAPTER 1

HEMODIALYSIS PRESCRIPTION

Definition of Dialysis:

In broad terms, the process of dialysis involves bidirectional movement of molecules across a semipermeable membrane. Clinically, this movement takes place in and out of blood, across a semipermeable membrane. If the blood is exposed to an artificial membrane outside of the body, the process is called hemodialysis (HD) or hemofiltration (HF). If the exchange of molecules occurs across the peritoneal membrane, the process is called peritoneal dialysis (PD) **(Ahmad, 2009).**

Hemodialysis (HD) therapy has been one of the true success stories in the annals of medical science. Before the availability of this treatment, the diagnosis of kidney failure was a death sentence **(Butman and Nissenson, 2005).**

Uremia:

Uremia, the clinical syndrome resulting from kidney failure, is a toxic state attributed to accumulation of solutes normally excreted by the kidney. This syndrome, which literally translates to ‘‘urine in the blood,’’ is the target of hemodialysis **(Depner, 2005).**

Unfortunately, despite major advances in the technology of HD and in the management of its complications, the

morbidity and mortality of patients on dialysis remain high, at a time that the incidence and prevalence of kidney failure persistently are increasing. Hence, the early and continued concern with the adequacy of dialysis continued **(Eknoyan, 2005).**

HD is the routine renal replacement therapy for more than 300,000 patients in the United States who have reached end-stage renal disease (ESRD). The goals of HD are straight forward and include restoring the body's intracellular and extracellular fluid environment and accomplishing solute balance by either removal from the blood into the dialysate or from the dialysate into the blood. Optimal care of the patient receiving long-term HD requires broad knowledge of the HD technique and appropriate prescription according to patient- and device dependent variables **(Ikizler and Schulman, 2005).**

Hemodialysis Prescription:

Table (1): Elements of Hemodialysis Prescription **(Colton & Lowrie, 2008).**

Elements of Hemodialysis Prescription:
1-Dialyzer
2-Time & frequency
3-Blood flow rate
4-Dialysate flow rate
5-Ultrafiltration rate(UF)
6-Dialysate composition
7-Anticoagulation