Current Status of the Implication of the Clinical Practice Pattern in Hemodialysis Prescription in Regular Hemodialysis Patients in Egypt (Marsa-Matrouh)

Thesis Submitted for Partial Fulfilment of Master Degree in Internal Medicine

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List of contents

Content	*Pages*
List of abbreviations	**V**
List of tables	**VIII**
List of figures	**IX**
Introduction	**2**
Aim of the work	**5**
Chapter 1: Hemodialysis prescription **Chapter 2:**Guidelines for kidney disease **Chapter 3:**Anemia of chronic kidney disease **Chapter 4:***Mineral Bone Disease* **Chapter 5:** Hemodialysis associated co-morbidities **Chapter 6:**Hemodialysis in EGYPT	**7** **24** **38** **44** **51** **57**
Patients and Methods	**61**
Results	**67**
Discussion	**91**
Summary	**100**
Conclusions and recommendations	**105**
References	**108**
Arabic summary	**--**

List of abbreviations

ABD	*Adynamic Bone Disease*
ADPKD	*Autosomal Dominant Polycystic Kidney Disease*
AGE	*Advanced Glycation Endproducts*
AJKD	*American Journal of Kidney Diseases*
ANZSN	*Australian and New Zealand Society of Nephrology*
AV fistula	*Arterio Venous Fistula*
bAP	*Bone Alkaline Phosphatase*
BNP	*B-type Natriuretic Peptides*
BP	*Blood Pressure*
BUN	*Blood Urea Nitrogen*
CAPN	*Canadian Association of Pediatric Nephrologists*
CARI	*Caring for Australian with Renal Impairment*
CDC	*Centers for Disease Control and prevention*
CHF	*Congestive Heart Failure*
CHOIR	*Correction of Hemoglobin and Outcomes In Renal Insufficiency*
CHr	*Reticulocyte Hb content*
CKD 5D	*Chronic kidney disease stage 5 on dialysis*
CKD	*Chronic kidney diseases*
CKD–MBD	*Chronic Kidney Disease-Mineral and Bone Disorder*
CMB	*Calcium Mass Balance*
CPG	*Clinical Practice Guidelines*
CREATE	*Cardiovascular Risk Reduction by Early Anemia Treatment with Epoetin Beta*
CSN	*Canadian Society of Nephrology*
cTns	*Cardiac Troponins*
CUA	*Calcific Uremic Arteriolopathy*
CVD	*Cardiovascular Disease*
DOPPS	*Dialysis Outcomes and Practice Patterns Study*
EBCT	*Electron-Beam Computed Tomography*

List of abbreviations (cont…)

EBPG	*European Best Practice Guidelines*
eKt/V	*The Equilibrated Kt/V*
EPO	*Erythropoietin*
ERA–EDTA	*European Renal Association - European Dialysis and Transplant Association*
ERBP	*European Renal Best Practice*
ERT	*Evidence Review Team*
ESA	*Erythropoietin Stimulating Agent*
ESRD	*End Stage Renal Disease*
FBC	*Full Blood Count*
FDA	*US Food and Drug Administration*
FGF	*Fibroblast Growth Factor*
GFR	*Glomerular Filtration Rate*
GN	*Glomerulonephritis*
GRADE	*Grades of Recommendation, Assessment, Development, and Evaluation*
Hb	*Hemoglobin*
HBV	*Hepatitis-B Virus*
HCV	*Hepatitis C Virus*
HD	*Hemodialysis*
HDF	*Hemodiafiltration*
HDP	*Hemodialysis Product*
HEMO study	*The Hemodialysis Study*
HIV	*Human Immunodficiency Virus*
IL-1	*Interleukin-1*
iPTH	*Intact Parathyroid Hormone*
K/DOQI	*National Kidney Foundation Kidney Disease Outcome Quality Initiative*
KDIGO	*Kidney Disease Global Outcomes Improvement initiative*

List of abbreviations (cont.)

KHA	*Board of Kidney Health Australia*
KrU	*Residual Renal Urea Clearance*
LVH	*Left Ventricular Hypetrophy*
MICS	*Malnutrition-inflammation complex syndrome*
MOH	*Egyptian Ministry of Health*
nPCR	*Normalized Protein Catabolic Rate*
NT-proBNP	*N-terminal prohormone of Brain Natriuretic Peptide*
PAD	*Peripheral Arterial Disease*
PCI	*Percutaneous Coronary Intervention*
PEM	*Protein energy malnutrition*
PRCA	*Pure Red Cell Aplasia*
RA	*Renal Association*
RCTs	*Randomised Controlled Trials*
RKF	*Residual kidney function*
ROD	*Renal Osteodystrophy*
SCD	*Sudden Cardiac Death*
SHPT	*Secondary Hyperparathyroidism*
SLE	*Systemic Lupus Erythematosus*
spKt/V	*Single-pool Kt/V*
SRI	*The Solute Removal Index*
stdKt/V	*standard Kt/V*
t-PA	*Tissue Plasminogen Pctivator*
TREAT	*Trial to Reduce Cardiovascular Events with Aranesp® Therapy*
TSAT	*Transferrin Saturation*
URR	*Urea Reduction Ratio*
USRDS	*United States Renal Data System*
VC	*Vascular Calcification*
VDR	*Vitamin D Receptor*
VDRA	*Vitamin D Receptor Activators*
WGs	*Work Groups*
β2m	*Beta 2-microglobulin*

List of tables

Table No	Title	Page No
1	*Main HD units&number of patients*	68
2	*Baseline characteristics of study population*	69
3	*Etiology of ESRD &associated co-morbidities in HD patients*	71
4	*HD data of study population*	74
5	*Mean monthly Hb&MCV levels during 6 months*	77
6	*Hemoglobin category during 6 months*	78
7	Methods of treatment of anemia during the study period and usisng of Iron and vitamins	80
8	The levels of Calcium, phosphorus and PTH during 6 months covered by the study	83
9	Calcium levels in the study population	84
10	Calcium levels in the study population	85
11	Calcium phosphorus product level in the study population	86
12	Different types of phosphate binders used by the study population.	87
13	Types of complications during HD session in the study population	88
14	Criteria of dialyzer used in the study population.	89

List of figures

Figure	Title	Page
1	Gender distribution in the study population	70
2	Different causes of ESRD in the study population	72
3	Different co-morbidities in the study population	72
4	Frequency 0f HD in the study population	75
5	Frequency of access failure in the study population	75
6	Viral status in the study population	76
7	Criteria of dialysate in the study population	76
8	Hemoglobin categories in the study population	78
9	History of blood transfusion in the study population	81
10	Type of ESA used by the study population	81
11	History of iron injection in the study population	82
12	History of adjuvant therapy in the study population	82
13	Calcium levels in the study population.	84
14	Phosphorus levels in the study population.	85
15	Calcium Phosphorus levels in the study population	86
16	Different types of phosphate binders the study population	87

List of figures (cont.)

Figure	*Title*	*Page*
17	*Types of complications during HD session in the study population*	**88**
18	*Criteria of dialyzers in the study population*	**89**

Introduction

INTRODUCTION

Studies examining the link between research evidence and clinical practice have consistently shown gaps between the evidence and current practice. Some studies in the United States suggest that 30%–40% of patients do not receive evidence-based 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 clinical practice, and data on the effect of evidence-based guidelines on knowledge uptake, process of care or patient outcomes is limited ***(Locatelli et al.., 2004).***

In recent years, specific clinical guidelines have been 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\DOQ I) guidelines and the Renal-European Dialysis and Transplantation Association best practice guidelines have been published in USA & Europe. Therefore; clinical practice guidance help individual physician and physicians as 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., 2004a).***

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 8 g/dl to 11 g/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., 2004a).***

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 importance 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 pattern of current clinical practice in hemodialysis prescription in regular hemodialysis patients in Egypt and to compare this pattern with standard international guidelines in hemodialysis prescription (K/DIGO 2010), stressing on anemia, bone disease management and adequacy of dialysis.