Current Status of the Implication of the Clinical Practice Pattern in Hemodialysis Prescription in Regular Hemodialysis Patients in Egypt
(Military & Police Hospitals in Cairo)

Thesis

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By

Mai Abd El-Razik Mohamed
M.B.B.CH. – Ain Shams University

Under Supervision of

Prof. Dr. Adel Mohamed Hussin Afifi
Professor of Internal Medicine and Nephrology
Faculty of Medicine – Ain Shams University

Dr. Essam Nour El-Din Afifi
Assistant Professor of Internal Medicine and Nephrology
Faculty of Medicine-Ain Shams University

Faculty of Medicine
Ain Shams University
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بسم الله الرحمن الرحيم

﴿وَقُل رَبِّ زِدنِي عِلمًا﴾

صدق الله العظيم

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LIST OF ABBREVIATIONS

Abbrev.	Full term
AV	Arteriovenous access
BFR	Blood flow rate
BMI	Body mass index
BP	Blood pressure
BUN	Blood Urea Nitrogen
CAPD	Continuous ambulatoryperitoneal dialysis
CAPR	Cardiopulmonary recirculation
CKD	Chronic kideny disease
CMS	US Centers for Medicare and Medicaid Services
CPG	Clinical practice guidelines
CRP	C- reactive protein
CVC	Central venous cathter
CVD	Cardiovascular disease
DFR	Dialysate flow rate
DM	Diabetes mellitus
DOPPS	Dialysis outcome and practice pattern study
ERA-EDTA	the European Renal Association-European Dialysis and Transplantationassociation
ESRD	End stage renal disease
GFR	Glomerular filtration rate
GraDe	Grades of recommendation assessment, Development, andevaluation
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HD	Hemodialysis
HDF	Hemodiafiltration

LIST OF ABBREVIATIONS (Cont....)

Abbrev.	Full term
HF	Hemofiltration
HTN	Hypertension
IPD	Intermittent peritoneal dialysis
K/DOQI	Kidney Disease Outcome Quality Initiative
KDIGO	Kidney disease improving global outcomes
KOA	The mass transfer area coefficient
LD	Spanish (Law Of Dependence)
MIA	Malnutrition -Inflammation atherosclerosis (MIA) Syndrome
MICS	'malnutrition–inflammationcomplex syndrome'
MOH	Ministry of health
NKF	National Kidney Foundation
PEM	Protein energy malnutrition
QIP	Qulaity improvement programs
RRT	Renal replacement therapy
SRI	Solute removal index
TMP	Transmembrane pressure
TNF α	Tumor necrosis factor
UF	Ultrafiltration
UKM	Urea kinetic modeling
UpostHD	Urea posthemodialysis
UpreHD	Urea prehemodialysis
URR	Urea reduction ratio
β2M	Beta 2 microglobulin
(K_{uf})	The ultrafiltration coefficient

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 harmfull 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\DOQI) 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 baseline 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 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

1. 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, stressing on anemia, bone disease management and adequacy of dialysis.
2. Statement of the current status of dialysis patient in Egypt (questionnaire).

Hemodialysis Prescription

Hemodialysis is a life sustaining procedure for the treatment of patients with end stage renal disease, it provides for correction of fluid and electrolyte abnormalities associated with chronic renal failure and leads to a dramatic reversal of uremic symptoms and improve the functional status of the patient and increase patient survival ***(William, 1999).***

Today we know that total kidney replacement requires more than just dialysis, but also we know that a minimum amount of dialysis is required to optimize both the duration and the quality of life, so to achieve goals of dialysis the dialysis prescription must ensure that an adequate amount of dialysis is delivered to the patients ***(Thomas, 2005).***

Table (1): Elements of Hemodialysis Prescription

Dialyzer
Time & frequency
Blood flow rate
Dialysate flow rate
Ultrafiltration rate
Dialysate composition
Anticoagulation

(Brenner and Rectors, 2008)