Current Status of the Implication of the Clinical Practice Pattern in Hemodialysis Prescription in Regular Hemodialysis Patients in Egypt (Cairo) Naser city (sector B4)

Thesis

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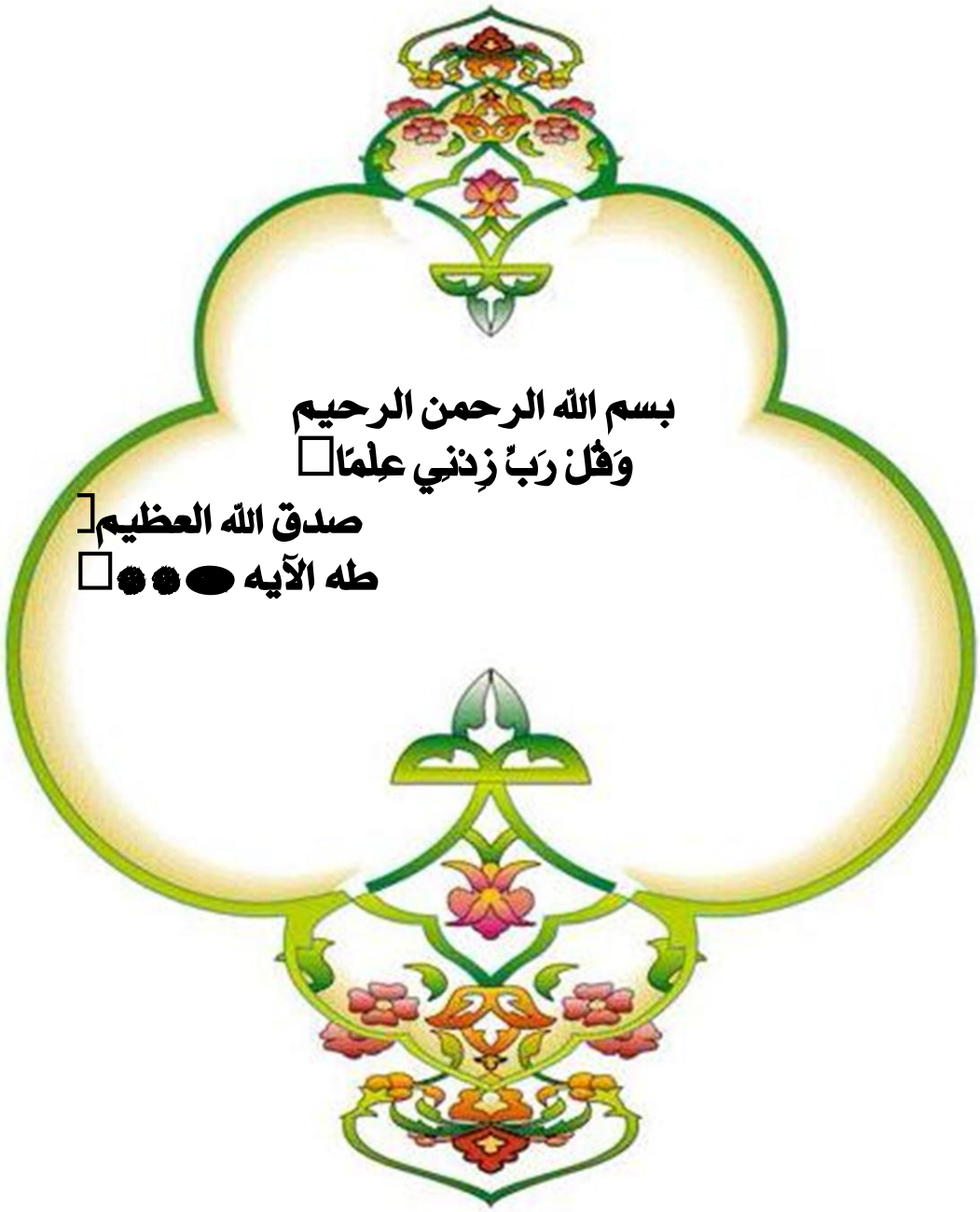

بسم الله الرحمن الرحيم

وَقُل رَبِّ زِدنِي عِلمًا

صدق الله العظيم

طه الآيه ●●⬭

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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 ambulatory peritoneal 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 Transplantation association
ESRD	End stage renal disease
GFR	Glomerular filtration rate
GraDe	Grades of recommendation assessment, Development, and evaluation
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus

LIST OF ABBREVIATIONS (Cont....)

Abbrev.	Full term
HD	Hemodialysis
HDF	Hemodiafiltration
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
MIA	Malnutrition -Inflammation atherosclerosis (MIA) Syndrome
MICS	'malnutrition–inflammation complex 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 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)***

Appropriately then, the care of dialysis patients has been the prime focus of nephrology, particularly after the widespread availability of maintenance dialysis when it became evident that mortality of dialyzed patients was high and their quality of life far from adequate.***(Ekonyan et al,2002)***

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)***

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)***

End-stage renal disease (ESRD) is one of the main health problems in Egypt. Currently, hemodialysis represents the main mode for treatment of chronic kidney disease stage 5 (CKD5), previously called ESRD or chronic renal failure **.*(Afifi ,1999)***

Although hemodialysis is often used for treatment of ESRD, no practice guidelines are available in Egypt. Healthcare facilities are seeking nowadays to develop practice guidelines for the sake of improving healthcare services**.** ***(Ministry of Health and Population,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 , stressing on anemia, bone disease management and adequacy of dialysis.

HEMODIALYSIS PRESCRIPTION

Uremia is a quite complex syndrome encompassing metabolic disorders and accumulation of various sized uremic toxins ***(Vanholder et al., 2003)***; that it would be impossible for intermittent renal replacement therapy (RRT) to replace the homeostatic role of the kidneys. Hence**,** the importance of providing at least adequate dialysis. **(*Ekonyan, 2005)***

Eradication of uremic symptoms was supposed to predict good long term results of dialysis-low morbidity and mortality. This approach of assessing adequacy is subjective, requires very careful monitoring of patients, and is time consuming ***(Twardowski, 2003)***

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)***

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 **. (*Ekonyan, 2005)***

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)***.

Table (1): Elements of Hemodialysis Prescription

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

(Brenner and Rectors,2008).

1-Dialyzers

Types of dialyzers and its choice

The dialyzers are calssified either according to their synthetic material into: cellulose, modified cellulose or synthetic polymers Or according to their hydrokinetics into High-Flux &Low-Flux Dialyzers. All dialyzers in clinical use are of the hollow-fiber type with membranes of cellulose, modified cellulose or synthetic polymers. ***(Ronco and Clark, 2005)***