

**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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in Internal Medicine

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A decorative floral border in shades of green, yellow, and pink, framing the central text. The border is symmetrical and features intricate floral and geometric patterns.

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ  
□ وَفَلَنُؤْتِيَنَّكَ رَبِّي فَتَكُونَ عَلِيمًا  
□ صَدَقَ اللَّهُ الْعَظِيمِ

طه الآية ١١٤



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## LIST OF ABBREVIATIONS

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

## LIST OF ABBREVIATIONS (Cont....)

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

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)*