The Annual Data focused on causes of hospitalization in the hemodialysis population

Thesis

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List of Abbreviations

Abbrev.	Full term
ABD	Adynamic bone disease
ACEIs	Angiotensin-converting enzyme inhibitors
ADPKD	Autosomal dominant polycystic kidney disease
AGE	Advanced glycation endproduct
AHA	American Heart Association
AJKD	American Journal of Kidney Diseases
ANZSN	Australian and New Zealand Society of Nephrology
ARBs	Angiotensin receptor blockers
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 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
DCa	Dialysate calcium concentration
DFO	Desfirroxamine
DOPPS	Dialysis Outcomes and Practice Patterns Study

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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 :	Glomerulo nephritis
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 immunodeficiency virus
IL-1	interleukin-1
iPTH	Intact parathyroid hormone
K/DOQI	Kidney Disease Outcome Quality Initiative
KDIGO	Kidney Disease Global Outcomes Improvement initiative
KHA	Board of Kidney Health Australia
LVH	Left ventricle hypetrophy
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
PRCA	Pure red cell aplasia
RA	Renal Association

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RCTs	Randomised control trials
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 activator
TREAT	Trial to Reduce Cardiovascular Events with
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
ß2m	Beta 2-microglobulin

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INTRODUCTION

End-stage renal disease (ESRD) is defined as irreversible decline in a person's own kidney function, which is severe enough to be fatal in the absence of dialysis or transplantation. ESRD is included under stage 5 where it refers to individuals with an estimated glomerular filtration rate (eGFR) less than 15 mL per minute per 1.73 m 2 body surface area, or those requiring dialysis irrespective of glomerular filtration rate decline. ***(NKF. (K/DOQI) ,2010)***

ESRD has become a public health concern worldwide as the total number of ESRD patients requiring renal replacement therapy has been growing dramatically**(Bello AK, Nwankwo E, El Nahas AM ,2005)**

ESRD is one of the main health problems in Egypt. Currently, hemodialysis (HD) represents the main mode for treatment of chronic kidney disease (CKD) stage 5, previously called ESRD or chronic renal failure. **(Ahmed AM, Allam MF, Habil ES, et al., 2010*).***

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.***(Eknoyan et al,2002)***

CKD is at least 3-4 times more frequent in Africa than in developed countries **(Naicker S, 2009)**

Patient registry and a statistical evaluation of patients with ESRD is useful to clarify the characteristics of ESRD patients and dialysis therapy, as well as the complications or results based on scientific evidence, to improve the quality of dialysis therapy and provide socioeconomic health administration information for a future health plan **(Jin DC ,2011)**

The prevalence of ESRD in Egypt increased from 225 (pmp) in 1996 to 483 pmp in 2004 **(Adel Afifi et al, 1996-2008).**

The main cause of ESRD in Egypt is hypertension followed by diabetes and still unknown causes represent about 15%. The main problem in developing countries is lack and inaccuracy of data registry. Also there are no available epidemiological reports for different parts of the country. **(MMJ,2011)**

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 standards, budgetary

limitation and methods of feeding back information concerning current practice. **(Cameron, 1999)**

Due to the high morbidity and mortality of End-stage renal disease (ESRD) as well as its social and financial implications, it is considered a major public health problem . Measurements of hospitalization in the dialysis population are important because it is an important indicator of patient morbidity and quality of life as well as the cost of treatment among dialysis patients.

(Reikes ST. 2000 Trends in end-stage renal disease)

Causes of hospital admisions are variable .In some cases, a hospitalization may result from deteriorated patient health ,caused by inadequate dialysis leads to serious conditions (e.g.,hyperkalemia,metabolic acidosis,volume overload) In other cases, a hospitalization is to treat a pre-existing comorbidcondition(e.g.,cardiovascular complications,anemia,infection,renal osteodystrophy,vascular acess complications)

(The University of Michigan Kidney Epidemiology 2012)

In the United States, dialysis patients are admitted to the hospital approximately twice a year and spend an average of 12 days in the hospital per year **(United States Renal Data System, 2011).**

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The rate of admissions for infection now 43 percent greater than in 1993. The rate for vascular access procedures has, in contrast, fallen to 48 percent Hospitals have made significant progress in using less costly settings to address vascular access interventions, but equivalent progress in lowering the rate of infectious complications is lacking ,so untill now the use of dialysis catheters continues to have the largest associated risk, finding well known in the dialysis community **(2011 USRDS Annual Data Report)**

According to cardiovascular complicatios in USA, congestive heart failure was present in 34.7%, coronary heart disease in 21.5%, and myocardial infarction in 7.9% of patients on hemodialysis**(USRDS 1999)**

In Europe the overall prevalence of co-morbid conditions need hospital admission are 26.3% for ischaemic heart disease, and 19.9% for peripheral vascular disease and infections , and a prevalence of 13.7% for cerebrovascular disease and 9.0% for malignancy in prevalent haemodialysis patients . In addition males starting renal replacement therapy suffered more often from ischaemic heart disease, peripheral vascular disease, cerebrovascular disease than females, especially in the higher age groups. (The dialysis outcomes and practice patterns study **(Euro-DOPPS))**

The prevalence of different co-morbid conditions in German and Austria haemodialysis showed a much higher compared to France,

Italy, Spain, and the UK espcialy in coronary artery disease (41.8%), and peripheral vascular disease(26.1%) ,and this can be explained by the high prevalence of diabetes **(McCauley J.1997)** In Saudi Arabia , among the causes of hospitalization, cardiovascular conditions were the leading single cause (19.1%), followed by access related reasons and infections (11.5% each).**(Saudi J Kidney Dis Transpl. 2002)**

Aim of the work

The purpose of this study was to determine number and causes of hospital admissions per year among prevelant hemodialysis patients