Develop Guideline for Patients Undergoing Hemodialysis

Thesis

Submitted for Partial Fulfillment of Master

Degree in Nursing Science

(Medical Surgical Nursing)

By

Gehan Sayed Youssif
(B.Sc. Nursing)

Faculty of Nursing
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Under Supervision of

Prof. Dr. Magda Abd Elaziz Mohamed
Professor of Medical Surgical Nursing
Faculty of Nursing - Ain Shams University

Dr. Hisham Atef Abo Ellil
Lecturer in renal department
Faculty of Medicine - Ain Shams University

Dr. Hanan Shahata Mohamad
Lecturer of Medical Surgical Nursing
Faculty of Nursing - Ain Shams University

Faculty of Nursing
Ain Shams University
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List of Abbreviations

ADH ·····Anti diuretic hormone

ARF ·····Acute renal failure

BUN·····Blood urea nitrogen

CRF ·····Chronic renal failure

ESRD·····End stage renal disease

ESRF ·····End stage renal failure

GFR ·····Glomerular filtration rate

HD ·····Hemodialysis

GIT ·····Gastrointestinal tract

KUB·····kidney, ureter, bladder

MG ·····Magnesium

PTH ·····Parathyroid hormone

RBCS·····Red blood corpuscles

RC·····Creatinine clearance

PD·····Peritoneal dialysis

RUS ·····Renal ultrasonography

AVF·····Arteriovenous fistula

NKUDIC ·····National kidney and urology disease information

ATN·····Acute tubular necrosis

CT·····Computed tomography

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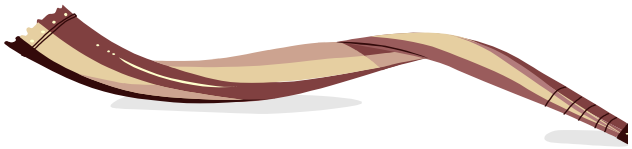

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Introduction

End stage renal failure (ESRF) is the final stage of chronic renal failure, which is a slow, progressive, irreversible loss of kidney function. Common causes of ESRF are diabetes, hypertension, pyelonephritis, polysystic kidney, renal vascular disease and the increase in using the nephrotoxins (aminoglycosides antibiotics, heavy metals, nonsteroidal anti inflammatory drugs) ***(Kamal, 2007).***

Hemodilysis is the most common treatment for patients with ESRD; it is a term to describe the removal of waste products and water from the patient's blood across dialyzer. For those the AVF is preferred, as there is evidence of long term potency, improved flow rate and lower complication than other methods ***(Mohammad, 2007).*** In Egypt, most patients (99, 9%) with ESRD are treated by HD while only 0.1 of patients are treated by peritoneal dialysis ***(Elsayed, 2007).***

It is important to educate the patients and family about diet, medication and medical follow up and the responsibilities of the patients this can be accomplished through explaining of dietary (protein, sodium, potassium, phosphate, and fluids) restriction, encouraging discussion of difficulties in modifying diet and fluid intake and explaining signs and symptoms of electrolyte imbalance especially high potassium and teaching alternative ways of reducing thirst ***(Lewis etal, 2004).***

Lack of understanding and knowledge in predialysis stage can be major factors contributing to the patients' anxiety and poor adjustment. The guidelines enhance patients' physiological and psychological adjustment in their transition to dialysis is an important reason for education ***(Robinson etal, 2004).***

End stage renal disease is not only a clinical concern but also a growing economic and organized problem. There-fore any early stage medical intervention that may prevent the initiation or progression of ESRD is extremely important. Recently, ESRD has received increased attention as a public health problem, this awareness has been on out growth of increasing number of patients entering ESRD therapy ***(Farag, 2005).***

The problem of renal failure is increasing rapidly, the patients with chronic renal failure, usually don't require permanent hospitalization, they need to adhere therapeutic regimen for the rest of their lives. Therefore they need maintenance hemodialysis as well as complying with the therapeutic regimen ***(Abd Elazeem***, ***2008).***

Significance of study:

Renal failure is the most common problem in Egypt and all over the world. The number of the patients is increasing. The prevalence rate of ESRD in Egypt 2oo6 was 604 per million in

population, every patient costs above 22,500 pound to have total cost of 700 million pounds annually in Egypt. The majority of patients with end stage renal failure who are on HD treatment developed many problems, the incidence of these problems can be reduced and its effect can be minimized with proper management which includes patients' participation in their care. The patients acquire accurate information that potentiates their ability to maintain appropriate self care practice of their problems ***(Mohammad, 2007)***.

Aim of the Study

Develop guidelines for patients undergoing hemodialysis

Research question:

What are the guidelines content suggested for patients undergoing hemodialysis?

Anatomy and Physiology of the Kidney

The kidneys lie on either side of vertebral column, their upper and lower borders are generally at the levels of the twelfth thoracic and third lumbar vertebra. Each kidney is approximately10-12cm in length, 5 to 7.5 cm wide. The left kidney is usually positioned slightly higher than the right ***(Kamal, 2001).***

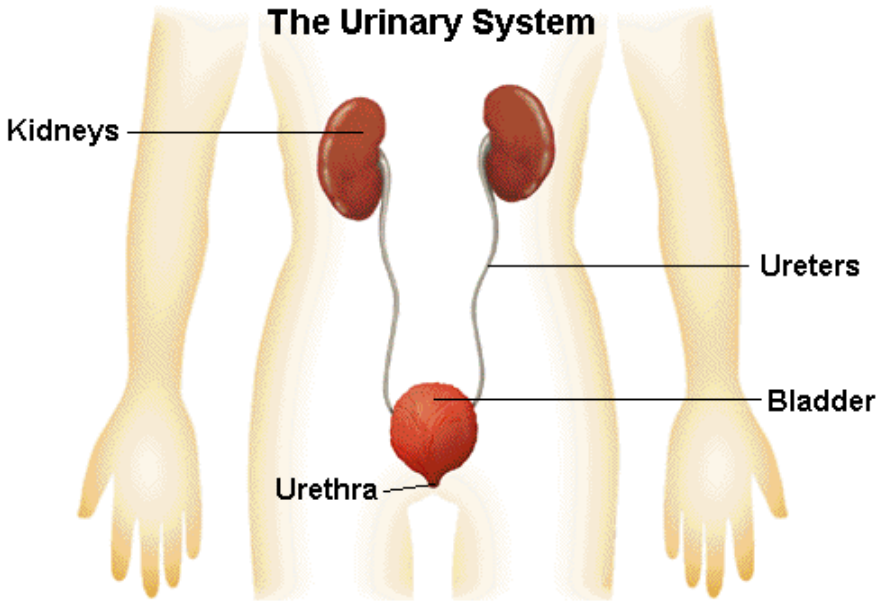


Figure (1): Structure of the urinary tract system ***(University of Maryland Medical Center, 2008).***

On sectioning, the kidney is divided into three regions cortex, medulla, and pelvis. The cortex is the outer layer of the kidney which contains the glomeruli, the proximal tubules and

the cortical portion of the loop of henele, the distal tubules and the cortical collecting duct. The medulla is the inner layer made up of the renal pyramids, which contains the medullary position of the loop of henel and the medullary portion of the collecting duct ***(Elsayed, 2007).***

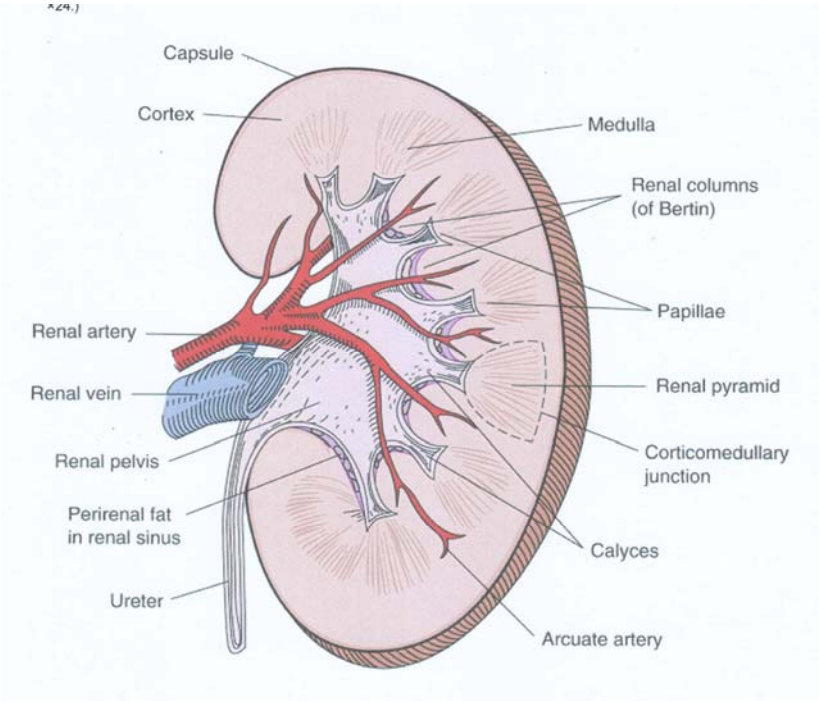
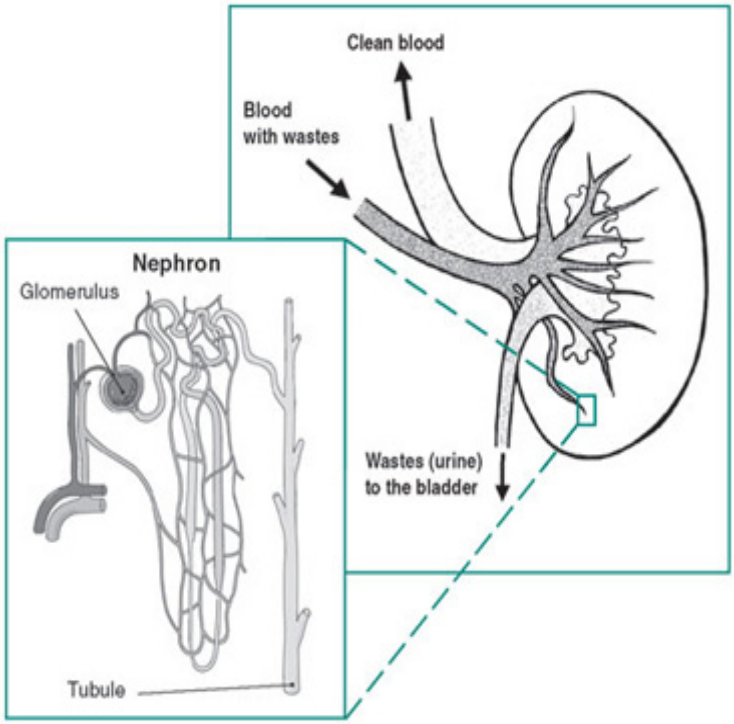


Figure (2): Anatomy of the kidney ***(Brenner, 2008).***

Each kidney is composed of about more than one million microscopic filters called nephrons. Each nephron is consisting of glomerulus, Bowman's capsule and tubular system. Glomerulus is a ball-shaped network of capillaries and a network of tubules. Blood plasma is filtered by the glomerulus. Tubular system consists of the proximal convoluted tubules, the

loop of henele and distal convoluted tubules ***(Adams and Osborne, 2005).***

These nephrons are responsible for eliminating toxins and waste materials from the blood, and for maintaining the electrolyte balance by selectively eliminating some electrolytes while retaining others, according to the body's needs ***(Abdou, 2000).***



Figur (3): In the nephron (left), tiny blood vessels intertwine with urine-collecting tubes. Each kidney contains about 1 million nephrons National ***(Kidney and Urologic Diseases Information Clearing house 2007).***

The kidneys also help regulate other bodily functions by secreting the hormones rennin, erythropoietin, and prostaglandins. Rennin helps control blood pressure, erythropoietin stimulates the