

Name: Joshua victory

Level: 300

Department: MBBS

Matric No: 16/MHS01/120

PHS 303

Name: Joelwa Victory
matric No: 16 (Mtsol) 120

Level: 300

Department: MBBS

PH5303

1) Discuss the pathophysiological process involved in renal failure

Pathophysiology also known as physiopathology is the study of the disordered physiological processes that cause, result from, or are otherwise associated with a disease or injury.

The kidneys serve a crucial role in filtering blood, and a wide range of diseases of other organ systems and systemic diseases may be manifested in the kidney. For example, renal disease is a prominent presentation of long-standing diabetes mellitus and hypertension and of autoimmune disorders such as systemic lupus erythematosus.

A particular challenge is that patients are typically asymptomatic until relatively advanced kidney failure is present. There are no pain receptors within the substance of the kidney, so pain is not a prominent presenting complaint, except in those renal diseases (e.g. nephrolithiasis) in which there is involvement of the ureter or the renal capsule. In early stages of kidney disease, patients may only have abnormalities of urine volume (e.g. oliguria) or composition (e.g. presence of red blood cells and/or protein). Later, they may manifest systemic symptoms and signs of lost renal function (e.g. edema, fluid overload, electrolyte abnormalities, and anemia). Depending on the nature of the renal disease, they may progress to display a wide range of chronic complications resulting from inadequate renal function.

The kidneys play multiple roles in the body, and

including blood filtration, metabolism and excretion of endogenous and exogenous compounds, and endocrine functions. ~~per~~ perhaps most significantly, the kidneys are the primary regulators of fluid, acid-base, and electrolyte balance in the body, and this remarkable pair of organs maintains homeostasis across a broad array of dietary and environmental changes. An understanding of each of these roles is required to illuminate the pathophysiological basis behind the many different ~~in~~ manifestations of kidney disease.

2. with the aid of suitable diagrams discuss the types of dialysis you know

Dialysis is a procedure that is a substitute for many of the function of the kidneys. ~~The kidneys~~ Dialysis can allow individuals to live productive and useful lives, even though their kidneys no longer work adequately.

There are two main types of dialysis

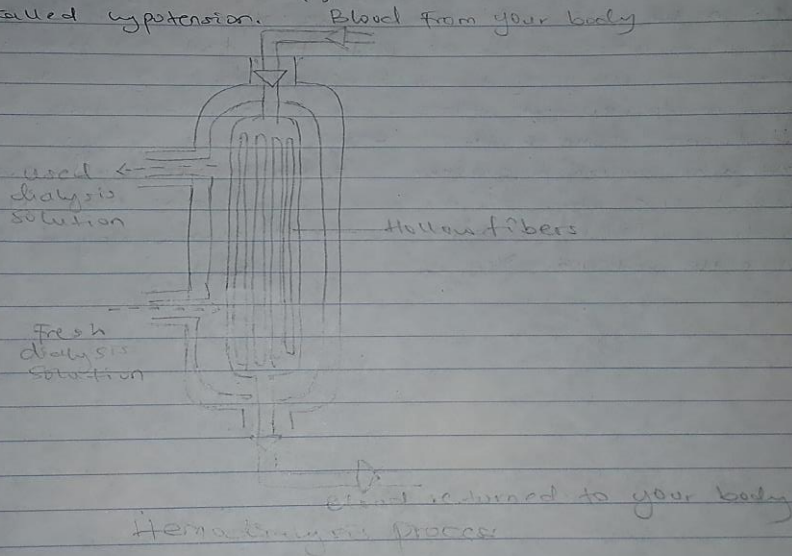
(a) hemodialysis

(b) peritoneal dialysis

Hemodialysis uses an external machine and a special type of filter to remove excess waste products and water from the blood.

During hemodialysis, blood passes from the patient's body to the dialysis machine through sterile tubing and into a filter, called a dialysis membrane. For this procedure, the patient has a specialized vascular tube placed between an artery and a vein in the arm or leg (called a arteriovenous graft). Sometimes, a direct connection is made between an artery and a vein in the arm. This procedure is called a Cimino fistula. Needles are then placed in the graft or fistula, and blood passes to the dialysis machine, through the filter, and back to the patient. If the patient requires dialysis before a graft or a fistula is

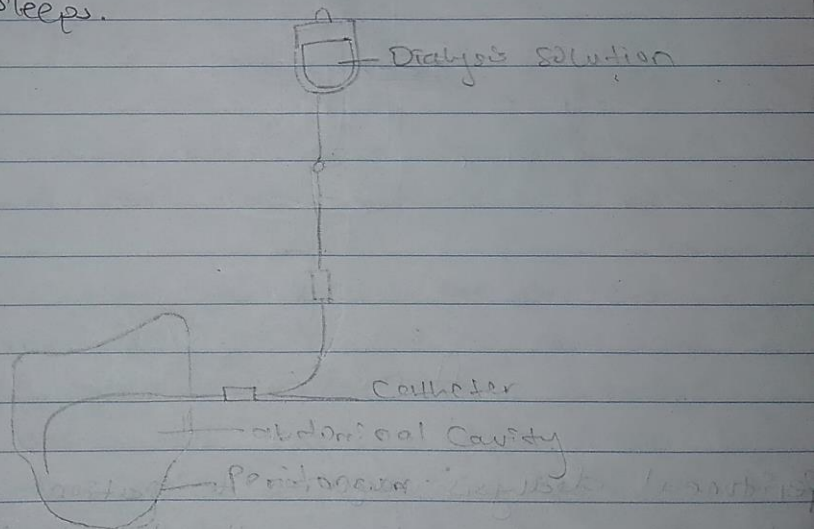
placed, a large diameter Catheter (Hemodialysis Catheter) is placed directly into a large vein in the neck or leg in order to perform dialysis. In the dialysis machine, a solution on the other side of the filter receives the waste products from the patient. Some problems of ~~hemodialysis~~ hemodialysis are sudden changes in your body's water and chemical balance during treatment can cause additional problems such as ~~muscle~~ muscle cramps, a sudden drop in blood pressure, called hypotension.



Peritoneal dialysis requires the patient to play a more active role in their dialysis treatment. Of primary importance is the patient's responsibility for maintaining a clean surface on the abdomen and Catheter, where treatment is administered, in order to prevent infection.

During this process, the patient weighs herself/himself to determine the strength of fluid to be used. The patient

then puts on a mask and cleans the peritoneal catheter site. Fluid that has been allowed to stay in the peritoneal cavity while the peritoneal ~~cavity~~ membrane filters waste into the fluid. The fluid and waste are then drained back into the plastic bag that originally contained the fluid. The patient then disconnects this bag containing waste in the fluid and connects a new bag of solution that is allowed to drain into the peritoneal cavity. Once the fluid is in the body, the new bag is rolled up and placed in the patient's underwear until the next treatment. This procedure usually takes 30 minutes to accomplish and must be done four to five times a day. An alternative to this treatment, some patients on peritoneal dialysis use a machine called a cycler. This cycler is used every night. Five to six bags of dialysis fluid are used on the cycler and the machine automatically changes the fluid while the patient sleeps.



Types of peritoneal dialysis are

- continuous ambulatory peritoneal dialysis (CAPD)
- automated peritoneal dialysis

The main difference between the two types is schedule of exchanges and one uses a machine and the other is done by hand. Possible problems are infection, hernia and weight gain.