

## **MODULE**

### **TITLE OF SKILL: HEMODIALYSIS SKILL**

#### **INTRODUCTION/RATIONALE:**

Hemodialysis is a technique meant to replace filtering function of kidneys. Kidneys remove nitrogenous waste that is produced during metabolism by our body. Patient needs hemodialysis when their estimated glomerular filtration becomes  $\leq 15$  ml/min/BSA. Patients can't sustain their life without renal replacement therapy ( hemodialysis ) after this level of their GFR.

#### **LEARNING OBJECTIVES:**

After the session students should be able to:

- Define hemodialysis
- Types of hemodialysis
- Indications of hemodialysis
- Complications during hemodialysis

#### **EQUIPEMENT REQUIRED**

- Hemodialysis machine
- Hemodialyzer
- Heparin
- Bicarbonate solution
- AVF needles
- Tubing
- Dual lumen catheter

#### **PROCEDURE:**

- Set up the machine
- Check patient's blood pressure, temperature and pulse
- Check patient's body weight
- Clean pricking site with pyodine
- Placement of avf needles into the vascular access
- Set up of heparin infusion
- Monitoring of vitals and record on sheet during procedure
- At the end discard used materials safely
- Clean the machine

#### **BACKGROUND INFORMATION ( THEORITICAL INFORMATION TO BE READ BY THE STUDENT)**

Hemodialysis is a type of renal replacement therapy in which uremic toxins removed from our blood by using an artificial kidney known as hemodialyzer when exposed to artificial plasma known as dialysate solution. It's a process of diffusion in which solutes moves against their concentration gradient.

TYPES:

- Intermittent: we do thrice weekly sessions of four hours duration
- Continuous: this happens round the clock without any break

INDICATIONS:

- Uremic pericarditis
- Uremic encephalopathy
- Severe metabolic acidosis
- Refractory hyperkalemia
- Refractory pulmonary edema

COMPLICATIONS:

- Hypotension: intradialytic drop in SBP of 10 to 15 mmHg or DBP of 20 mmHg is the most common complication of hemodialysis
- Muscle cramps: involuntary contraction of a muscle especially at night
- Headache
- Nausea and vomiting
- Itching

DR BHAGWAN DAS  
ASSOCIATE PROFESSOR NEPHROLOGY  
LUMHS, JAMSHORO