Material
&
Methods
MATERIAL & METHODS

The present study was carried out in the dialysis unit of Department of Medicine M.L.B. Medical College, Jhansi. 50 patients of renal failure out of 9050 patients admitted in medical wards, surgical and Obst. & Gynae wards in last one year (December 2000 - December 2001) were selected for the study. Full history clinical examination and investigations were done of every patients admitted for hemodialysis in the dialysis unit.

Other material required -

1. The dialyzer: We were using hollow fibre type of dialyzer.


3. Dialysis solution: We were using acetate solution.

4. Dialysis machines

Hemodialysis System:

It includes blood circuit and dialysate circuit. Central part of both circuit is dialyser where waste
product, excess electrolytes and water are removed from patient's blood. Dialysis fluid and blood are pumped through dialyser in counter current director separated by semi-permeable membrane. The blood flow compartment is monitored to control the pressure flow and accidental entry of air into blood circuit, in dialysis fluid compartment the composition of dialysis fluid flow, pressure and accidental entry of blood in dialysate due to rupture of dialyser membrane need to be monitored.

**Blood Circuit**

```plaintext
Blood pump

Dialyser

Dialysis fluid
Blood

Arterial pressure monitor
Clamp
Arterial access from pt.

Air detector

X Clamp

Venous access to PT.
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Dialysis fluid circuit

- Heater
- Deaeration pump
- Proportioning pump
- Conductivity Cell
- Temp. monitor
- Conductivity display
- Water
- -----> Concentrate
- Dialysate
- Pressure monitor
- Blood from pt.
- Blood to pt.
- Blood leak detector
- Baypass
- Throttle valve
- Dialyser

Other material required -
- Access needle
- Blood tubing
- Heparin pump.
**Examination**

After putting pt. on Hemodialysis system, we have to do intensive monitoring of patient from start to end.

Monitoring includes -

1. B.P. Monitoring every 30 min.
2. Pulse rate monitoring.
3. ECG monitoring.
4. To see any accident at start of dialysis which include -
   - Hemorrhage,
   - Thrombosis, during putting cannula
   - Stenosis.
   - Air embolisms.

5. Look for -
   - Vomiting,
   - Nausea,
   - Muscle Cramp,
   - DDS,
   - Allergy,
   - microbial contamination: Fever, Shivering etc.

7. Give full attention to every complaint made by patient

8. To check hemodialysis system/dialysate.

9. To check anticoagulation disorder during hemodialysis by BT, CT platelet count, whole blood partial thromboplastin tie (if needed).

**Collection and storage of sample**

1. Pre-dialysis sample 10 ml before start of dialysis for -
   - S. Na+
   - S. K+
   - pH
   - Blood sugar,
   - Blood urea,
   - S. Creatinine.

2. Collect 10 ml sample after dialysis for same.

   It any complication occur during dialysis, then to manage it accordingly and then to find out its outcome.