

# Hemodialysis

## Indications and complications

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### Introduction

Hemodialysis is a method of removing excess fluid, salt and wastes from the blood, effectively replacing the excretion functions of failed kidneys.

Hemodialysis used in hospitalized patients, particularly during critical illness causing acute kidney injury (AKI).

In this case, the treatment may be delivered continuously while the patient is in bed.

Hemodialysis is also used in otherwise healthy patients with end stage renal disease (ESRD), who are living relatively normal lives. In this case the treatment is delivered over a total of about three sessions of four hours each per week.

These sessions delivered while the patient is sitting in a chair, or overnight while the patient is asleep.(1)

### Goals of hemodialysis :

- Correct electrolyte balance.
- Correct metabolic disorders.
- Correct fluid state.
- Remove toxins.
- Control BP.
- Prevent uremia and its complications.
- Improve survival. (1)

### Indications of hemodialysis :

The decision to initiate dialysis or hemofiltration in patients with kidney failure depends on several factors. These can be divided into acute or chronic indications.(2)

### Acute indications:

Indications for dialysis in the patient with acute kidney injury are summarized with the vowel mnemonic of “AEIOU”

- Acidemia from metabolic acidosis.
- Electrolyte abnormality, such as severe persistent hyperkalemia.
- Intoxication, that is, acute poisoning.
- Overload of fluid (pulmonary edema).
- Uremia such as pericarditis, encephalopathy, or uremic gastritis.(2)

### Chronic indications:

Chronic dialysis may be indicated when a patient has symptomatic kidney failure and low glomerular filtration rate (GFR<15 mL/min).(2)

### Complications during hemodialysis :

- Hypotension
- Hypoglycemia
- Muscle cramps
- Disequilibrium syndrome
- Disturbances of heart rhythm.
- Bleeding.
- High blood pressure.
- Anemia.
- Cardiac problems
- Potassium imbalance.
- Bone disease.
- Sexual dysfunction.
- Depression.
- Constipation.
- Transfusion related disease.(3)

### Conclusion :

The hemodialysis to be perfect must be there is a good doctor, nurse and good supply and the most important factor to give perfect outcomes of the patients in the social and psychological support. HD patients are exposed to different types of infections including bloodstream infections and localized infections of vascular access; blood-borne infections with hepatitis B virus, hepatitis C virus, human immunodeficiency virus, and airborne infections. Sources of infections include contaminated water, equipment, environmental surfaces, and infected patients. also Contaminated healthcare worker hands are among the most common modes of transmission of healthcare-associated infections.

to control it there's standard precautions, isolation strategy, vascular access, water treatment, procedures of cleaning, disinfection and sterilization, waste management, environmental control, and vaccination.

### References:

1. www.kidney.org
2. Lerma, E., Sparks, M . and Topf, J. (n.d.) Nephrology secrets. 3<sup>rd</sup> ed.
3. Harris,D.,Elder,G.,kairaitis,L. and Rangan, G. (n.d.) Pocket guide to clinical dialysis. 2<sup>nd</sup> ed.

