

ANEMIA AND CKD

Very often, patients with chronic kidney disease (CKD) may find it difficult to walk up a flight of stairs or perform their everyday activities, or they may often feel weak and tired.

One of the reasons for this could be anemia.

Anemia

Anemia is a medical condition (which can also be caused due to other reasons besides CKD), where a person may have lesser than the normal number red blood cells or lower levels of the protein “hemoglobin”. Red blood cells and hemoglobin help to carry oxygen from the lungs to the different parts of the body — this important function gets affected in anemia.

A patient with CKD may begin to develop anemia when kidney function starts dropping in the early stages of CKD; this gets worse as the disease progresses.

Why do people with CKD develop anemia?

The kidneys produce a hormone called erythropoietin (EPO) which instructs the bone marrow to increase production of red blood cells. But when the kidneys are damaged, as in CKD, they are unable to make sufficient quantities of this hormone. This leads to fewer blood cells in the body, which results in anemia.

Sometimes, people with CKD develop anemia because their diet contains lower levels of folic acid, iron or vitamin B12 (which are necessary to make hemoglobin), or because they lose some blood during dialysis.

Symptoms and Diagnosis

Many patients with CKD suffer from anemia. About 51% of those diagnosed with stages 1–3 of CKD (mild kidney failure), 55% of those with stage 4 CKD (moderate kidney failure) and 76% with stage 5 CKD (end stage renal disease requiring dialysis) also have anemia.

Symptoms

Patients who have both CKD and anemia often experience some of these symptoms:

- Fatigue or tiredness.
- Dizziness.
- Shortness of breath or difficulty breathing.
- Chest pain.
- Trouble concentrating or focusing.

Diagnosis

A number of routine blood tests help the doctor diagnose if a patient has anemia. The CBC or “complete blood count” estimates the number and types of blood cells in the body. As a part of this test, the hemoglobin (Hb) level is also measured. Anemia is diagnosed when hemoglobin levels fall to <13 g/dl in men and <12 g/dl in women. Estimating the iron and transferrin saturation levels helps the doctor to understand if the anemia is due to an iron deficiency — ferritin levels less than 200 ng/l and transferrin saturation scores less than 30% may be indicative of anemia.

Treatment

A doctor usually suggests one or more of the following methods to treat anemia in patients with CKD

- Iron supplements: Iron may be given either as a pill or injection.
- Nutrient supplements: Vitamin B12 and folic acid may be recommended.
- Blood transfusion: A red blood cell transfusion increases the number of these cells present in the blood.
- Erythropoieis stimulating agents (ESA): Epoetin or darbepoetin injections may be recommended in certain cases.

CBC = complete blood count CKD = chronic kidney disease

EPO = erythropoietin ESA = erythropoieis stimulating agents

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