Changes of Red blood cell parameters and morphology in chronic kidney diseases:A cross sectional study in a tertiary care hospital

Introduction : Chronic kidney disease(CKD) is a dreadful condition leading to drastic decline in renal function resulting in renal failure,cardiovascular illness and early mortality. Numerous haematological and biochemical changes are one of the major manifestations of progressive deterioration in kidney function.The aim of the present study is to study various changes in red cell parameters and morphology in the CKD patients.

Materials and methods: 100 patients with CKD were included in this study. Age, gender,RBC count, haemoglobin(Hb), haematocrit, Mean corpuscular volume(MCV), Mean corpuscular haemoglobin(MCH), Mean corpuscular haemoglobin (MCHC), and peripheral smears were studied. Results were analyzed using SPSS20.0 version.

Results: Of the 100 CKD patients, the most common group sampled were male patients(60%) with the mean age of 53 years($\pm$6 years). The study revealed that Haemoglobin(Hb),Red blood cell(RBC), Packed cell volume(PCV) were low in CKD patients. The most common type of anemia was normocytic normochromic type, followed by dimorphic anemia.

Conclusion: Anemia is a common clinical manifestation in chronic kidney disease patient. From CBC and peripheral smears findings, the types of anemia, degree of haemolysis can be analysed which helps in appropriate treatment and underlying cause.

Keywords: Chronic kidney disease, Peripheral smear, RBC indices, Anemia.