

HEMATOLOGICAL VARIATIONS ALONG DISEASE PROGRESSION IN CKD AFFECTED PEOPLE OF GIRANDURUKOTTE AND MAHIYANGANAYA, SRI LANKA

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Hematological parameters of patients with chronic kidney disease (CKD) in Girandurukotte and Mahiyanganaya areas were followed in a cross-sectional study that comprised 175 volunteer subjects. Whole blood, urine and background information were collected from each under informed consent. The study spanned all five stages of CKD progression and a control (estimated glomerular filtration rate, eGFR > 120 ml/min/1.73m²). Erythrocyte, leukocyte (total and differential) and platelet counts, hemoglobin and hematocrit levels were obtained from an automated hematology analyzer. In addition, total and differential leukocyte counts were made from Giemsa stained blood smears. Disease progression was followed in terms of kidney dysfunction markers; serum creatinine based eGFR (MDRD equation) and urine albumin to creatinine ratio (UACR, mg/g). Results showed inter stage differences in hemoglobin levels, erythrocyte, lymphocyte, monocyte and basophil numbers of automated counts, and in lymphocytes and monocytes in blood smears (p > 0.001, one-

way ANOVA with Tukey HSD). Pearson's linear correlation of hematology parameters with disease progression revealed significant associations (p < 0.001) of eGFR with the automated counts of erythrocytes (r < 0.001), hemoglobin (r < 0.001), hematocrit (r = 0.001), total leukocytes (r = 0.002), lymphocytes (r < 0.001), monocytes (r < 0.001), and basophils (r = -0.012). Platelets showed a positive correlation (r = 0.015, p < 0.05). UACR significantly (p < 0.001) associated with erythrocytes (r = -0.006), hemoglobin (r = -0.005), hematocrit (r = -0.009), lymphocytes (r < 0.001), monocytes (r = -0.004) and basophils (r = 0.008). Counts from blood smears showed correlation (p < 0.001) of eGFR to total leukocytes (r = 0.005), lymphocytes (r < 0.001) and monocytes (r < 0.001) while UACR associated with lymphocytes (r < -0.001) and monocytes (r = -0.001). Results collectively revealed that the blood cell counts change with CKD disease progression.

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