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ALLIED HEALTH SCIENCES

ABSTRACTS

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RESEARCH BEYOND BORDERS: INTERDISCIPLINARY APPROACHES TO HEALTH CHALLENGES

ABSTRACTS

Association of Red Blood Cell Morphology with Anaemia and CKD Stages Among the Patients Attending Medical and Nephrology Clinic at Teaching Hospital Jaffna

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Chronic Kidney Disease (CKD) patients are highly susceptible to anaemia. This study aimed to assess the association between the red blood cell (RBC) morphology and CKD duration, anaemic status, and CKD stages among the CKD patients attending the Nephrology and Medical Clinic, Teaching Hospital Jaffna. This descriptive cross-sectional study used a convenience sampling method and recruited 137 patients. The Haemoglobin concentration and RBC morphology (Blood film examination under light microscope) were analysed. With the serum creatinine (Jaffe method), the Estimated Glomerular filtration rate (eGFR) was calculated to determine CKD stages. The majority (78.1%, 107nos.) of the study population exhibited Normocytic Normochromic (NN) morphology, with <1 year CKD duration (52nos., 38%) and 6-10years (20nos., 14.6%) duration. Microcytic Hypochromic (MH) morphology was observed in 20.4% (28nos.) of patients, with 13 (9.5%) having CKD for 1-5years. Among the 66 (48.18%) anaemics, MH, NN, and Normocytic Hypochromic (NH) morphology were prevalent in 19, 28.5, and 0.7% respectively. Anaemic status and RBC morphology showed a significant relationship among stages 2 ($p=0.001$) and 3a ($p=0.036$) patients, as analysed with the Chi-square test in SPSS. The mean rank of eGFR was significantly higher among those with NN (72.06%) than MH (52.50%), based on the Mann-Whitney U-test ($p=0.019$, $Z=-2.355$). There was a significant association between NN morphology and short CKD durations. Patients with MH morphology tend to have lower eGFR, indicating a more affected kidney function than those with NN morphology. These findings highlighted the importance of early RBC morphological assessment and the CKD stage-wise treatment for anaemia, and they require further validation through larger multicentre studies.

Keywords: *Anaemia, Chronic Kidney Disease, CKD stages, Red blood cell morphology*