KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Poster
Abstract Submission No. : PO-1400

Correlation between NLR, PLR, and MLR as a Hematological Inflammatory Marker towards Decreased of Estimated Glomerular Filtration Rate among Type 2 Diabetes Mellitus Patients in Karanganyar General Hospital

Muhammad Faisal Putro Utomo[1], Aninditya Verinda Putrinadia[1], Musrifah Budi Utami[2], Nur Hidayat[2], I Gusti Ngurah Agung Tresna Erawan[3]
[1]Department of Internship Doctor, Karanganyar General Hospital, Indonesia
[2]Department of Internal Medicine, Karanganyar General Hospital, Indonesia
[3]Department of Internal Medicine-Nephrology, Sanglah General Hospital, Udayana University, Indonesia

Objectives: Neutrophil-to-lymphocyte ratio (NLR), platelet-to-lymphocyte ratio (PLR), and monocyte-to-lyphocyte ratio (MLR) have been found to be available novel markers to determine inflammation in many conditions such as cardiac and metabolic disorders and also infection. NLR and PLR are inexpensive and measured easily. Diabetic nephropathy is one of microvascular complication in diabetes patients has an inflammatory pathology. Many inflammatory markers have been found to be related to diabetic nephropathy. Study related NLR, PLR, and MLR towards renal function still limited. This study was aimed to reveal and explain the correlation between NLR, PLR, and MLR to affect eGFR among type 2 diabetes mellitus patients.

Methods: This is an analytic cross-sectional study conducted at inpatient ward, Karanganyar General Hospital between October to November 2019. Primary data were taken from primary data using anamnesis, physical examination, and laboratory examination and extracted using data extraction from. Complete blood count, random blood glucose and creatinine serum were documented.The value of eGFR were calculated using CKD-EPI formula. Data were analyzed using SPSS with univariate and bivariate analysis (spearman test).

Results: From a total 171 respondents, 40.4% were males, age range between 34-86 years old. eThe proportion of respondents who had diabetic kidney disease and hypertension were 19.9% and 53.8%. Our study found moderate negative correlation between MLR with eGFR ($p<0.001$; $r=-307$). This study also found a weak negative correlation between NLR and MLR towards eGFR ($r=-0.215$ and $r=-0.253$ respectively) with p value <0.05.

Conclusions: Based on this research, elevation of inflammatory markers has been shown to affect the decrease of renal function. NLR, PLR, and MLR may became a simple tools to examine the systemic inflammation process in metabolic disease, especially in rural area that had limitation of diagnostic tools to improve the good prognostic for diabetic patients.