

Association of Neutrophil to Lymphocyte and Platelet to Lymphocyte Ratios to Gestational Diabetes Mellitus: Predictive Value for Early Diagnosis

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Gestational Diabetes Mellitus (GDM) has both detrimental maternal and fetal effects. Early screening, diagnosis and management is crucial. Availability and affordability of glucose tests pose a problem in rural, far-flung, and poor areas. The ease of doing and compliance of patients with glucose tests warrant a simpler and cheaper option. Complete blood count (CBC), specifically neutrophil to lymphocyte and lymphocyte to platelet ratios (NLR, PLR) have been shown to be correlated with GDM.

Objective

This study aimed to establish a correlation and strengthen the utilization of inflammatory and hematologic ratios in predicting GDM during the first trimester among Filipinos.

Method

A prospective cohort approach with 300 patients enrolled in the study. Initial CBC and 75g OGTT results were gathered during the 1st trimester. Subsequent 75g OGTT during their 24-28th week age of gestation were documented and classified according to IADPSG guidelines.

Results and Discussion

A strong correlation was found between NLR and PLR, and the early detection of GDM. The optimal cut off points based on ROC Curve Analysis are 3.29-3.42 for NLR and 985.19-1016 for PLR. Findings of the study suggest that both NLR and PLR can be important markers in the early detection of GDM.

Performance measures of NLR and PLR.

Parameters	Cases		Controls		p value
	Mean	SD	Mean	SD	
NLR	3.38	2.49	2.99	1.34	0.096
PLR	1384.95	656.74	1349.24	480.66	0.591

Comparison of NLR and PLR between Cases and Control.

Parameters	NLR	PLR
Sensitivity	0.38	0.82
Specificity	0.733	0.24
Positive Predictive Value	0.588	0.519
Negative Predictive Value	0.542	0.571
Positive Likelihood Ratio	1.425	1.079
Negative Likelihood Ratio	0.845	0.75

Dr. Laura Sophia Formantes, the principal author, under the guidance of her research adviser, Dr Judith Cristobal conducted this research during her residency training at the Mariano Marcos Memorial Hospital and Medical Center in the Philippines in 2017-2021. This research is inspired by their mission to bring quality mother and child healthcare to all Filipinos.