

# Neutrophil To Lymphocyte Ratio As An Inflammatory Marker In Obesity

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## Objectives:

Cardiovascular morbidity and mortality of obesity is associated with classic risk factors, namely dyslipidemia, hypertension and impaired glucose metabolism. Aim of this study is to evaluate inflammation as an independent risk factor by using neutrophil to lymphocyte ratio (NLR).

## Methods:

Patients who admitted to our outpatient clinic between January-December 2014 were assessed retrospectively. Patients diagnosed as diabetes, prediabetes, hypertension, thyroid dysfunction and any acute or chronic inflammatory disorder were excluded. A total of 437 female cases were included in the study. Cases were grouped according to body mass indices (BMI).

Group (BMI kg/m <sup>2</sup> )	n	HOMA-IR	Triglyceride	HDL	LDL	NLR
0 (18,0-24,9)	45	1,33 ±0,63	90,67±47,71	58,79 ±15,43	123,48 ±50,51	1,85 ±0,68
1 (25,0-29,9)	86	1,93 ±0,89	106,42±62,13	53,30 ±14,85	133,31 ±39,83	1,86 ±0,53
2 (30,0-34,9)	98	2,43 ±1,29	126,00±59,38	46,93 ±11,89	135,40 ±33,55	1,75 ±0,63
3 (35,0-39,9)	76	2,80 ±1,50	147,10±75,07	48,48 ±15,20	131,03 ±36,28	1,79 ±0,56
4 (40,0-44,9)	67	3,87 ±2,26	152,17±70,21	46,64 ±21,46	130,19 ±32,46	2,28 ±0,53
5 (>45)	65	3,98 ±1,45	144,85±82,09	44,98 ±11,12	126,94 ±34,59	3,07 ±2,23

## Results:

Groups were age-matched (p=0,513). HOMA-IR and triglyceride values were positively, HDL levels were negatively correlated with BMI (p<0,05). There was no association between LDL values and BMI. There was no statistically significant difference between NLR values of groups 0, 1, 2 and 3. A trend toward higher NLR in group 4 was observed but the difference did not reach statistical significance (p=0,117). Group 5 however had significantly higher NLR values (p=0,000).

## Conclusions:

Increased NLR value is considered as an inflammatory marker and an indicator of cardiovascular risk. Our results established higher NLR values in morbid obesity patients and emphasized the increased cardiovascular risk in morbid obesity.

## References:

- 1-Bahadır A, Baltacı D, et al. Is the neutrophil-to-lymphocyte ratio indicative of inflammatory state in patients with obesity and metabolic syndrome? *Anadolu Kardiyol Derg.* 2014;15.
- 2-Ryder E, Diez-Ewald M, et al. Association of obesity with leukocyte count in obese individuals without metabolic syndrome. *Diabetes Metab Syndr.* 2014 ;8(4):197-204.

