Inflammation biomarkers and differential diagnosis of pelvic tumors: an observational study .

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Carcinogenesis and systemic inflammation have been correlated and the ratios of white blood cell and platelet counts have been suggested to have a prognostic significance in ovarian tumor patients. The purpose of our study was to estimate the prognostic value of inflammation biomarkers in ovarian mass patients.

We retrospectively assessed the potential relationship between neutrophil-to-lymphocyte (NLR), platelet-to-lymphocyte (PLR), lymphocyte-to-monocyte (LMR), neutrophils-to-monocyte (NMR), and monocytes-to-platelets (MPR) and malignancy in patients admitted in the Department of Gynaecology of Metaxa Memorial Cancer Hospital due to adnexal mass.

NLR and PLR were found to be significantly higher and LMR significantly lower in patients with malignancy. Platelet and lymphocyte count was also higher in these patients in comparison with those in patients with borderline tumors. On the other hand, white blood cell count , neutrophil-to-monocyte ratio , platelet-to-neutrophil ratio and platelet-to-monocyte ratio did not differ significantly. Cut-off points for identifying malignancy were estimated to be ≥2.4 for NLR, ≥181.1 for PLR and ≤4.55 for LMR.

Differential diagnosis between malignant and benign adnexal masses can be assisted by inflammation biomarkers. Larger prospective studies are needed in order to confirm these findings and strengthen the use of these inexpensive and easy to calculate ratios.

Table 1. Values of the examined biomarkers and statistical significance of comparison among the groups

	Benign (N=124)	***Borderline (N=9)***	***Malignant (N=46)***	***p-value malignant vs benign***	***p-value malignant vs borderline***
Neutrophil count					
Mean	4751	5582	4950	0,013	0,238
Median	4436	5139	5432		
SD	1978,29	1619,73	1957,55		
Range	13137	5134	7177		
Lymphocyte count					
Mean	2190, 94	1556,11	1802,95	0,004	0,04
Median	2176	1652	1786,5		
SD	687,66	613,90	612,85		
Range	4247	1862	3429		
Monocyte count					
Mean	443,47	400,55	496,02	0,042	NS
Median	402	362	470,5		
SD	179,96	154,29	147,66		
Range	1405	489	559		
Platelets count					
Mean	271911,29	235222,22	344565,21	<0,001	0,004
Median	265000	236000	307000		
SD	70079,51	42313,64	131180,22		
Range	319000	138000	735000		
NLR					
Mean	2,34	4,00	3,62	<0,001	0,28
Median	2,14	3,18	2,80		
SD	1,18	2,69	2,64		
Range	8,01	7,91	16,23		
PLR					
Mean	134,59	180,68	210,61	<0,001	0.12
Median	128,36	152,56	184,22		
SD	50,47	88,04	98,64		
Range	296,48	251,99	426,70		
LMR					
Mean	5,32	4,17	3,94	<0,001	NS
Median	5,0	3,35	3,8		
SD	1,8	1,91	1,78		
Range	9,66	5,27	8,41		

SD: Standard deviation

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