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THE EFFECTIVENESS OF THE SYSTEMIC IMMUNE INFLAMMATORY INDEX (SIII) IN DISTINGUISHING BETWEEN TESTICULAR TORSION AND EPIDIDYMO-ORCHITIS

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Introduction:

Testicular torsion is one of the most common causes of acute scrotum in children. Early diagnosis is important because it can result in organ loss within hours. Conservative treatment is the mainstay of treatment for epididymo-orchitis.

The Systemic Immune Inflammatory Index (SIII : Neutrophils × Platelets / Lymphocytes) is a hematological biomarker that can be easily calculated and is a parameter that can be used to assess disease activity, risk, and prognosis in cardiovascular, pulmonary embolism, and rheumatological diseases, but its cutoff values vary depending on the disease. The aim was to evaluate the inflammatory response in cases of acute scrotum using complete blood count data to facilitate differential diagnosis.

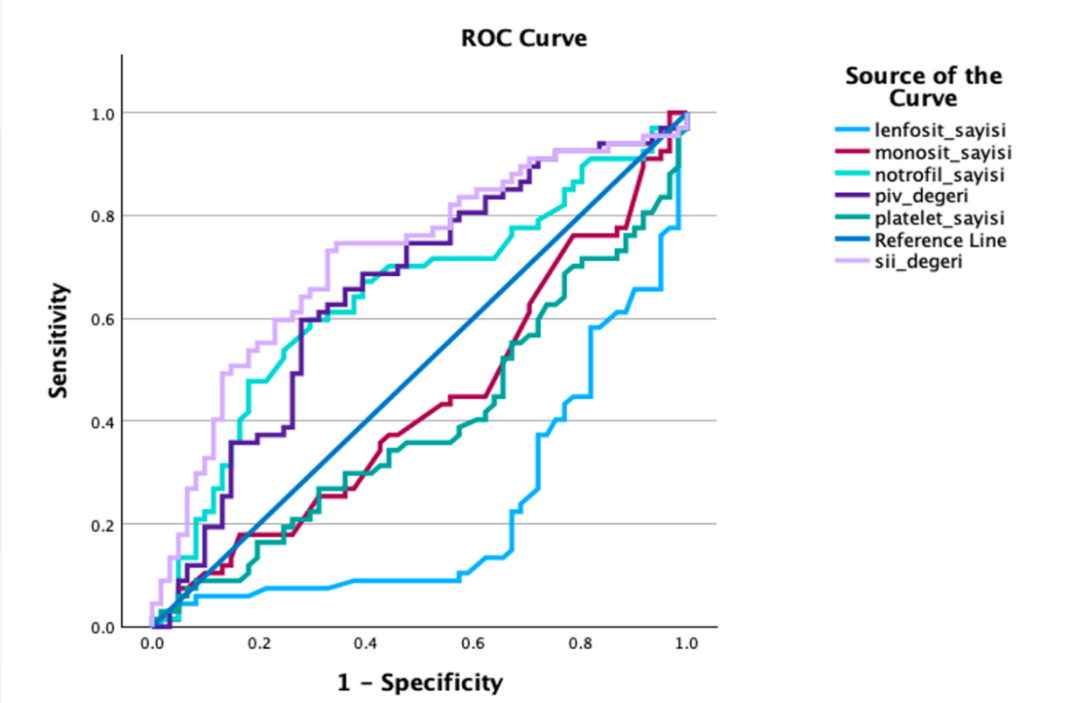
Testicular Torsion - Epididymoorchitis					
Feature (n=128)	AUC* (95% CI**)	p value	Cutoff Point	Sensitivity %	Specificity %
Platelet Count	0.399 (0.301-0.497)	0.044	565.0	1	100
Lymphocyte Count	0.228 (0.145-0.312)	<0.001	7.5	0	100
Neutrophil Count	0.641 (0.543-0.738)	0.005	6.4	59	71
Monocyte Count	0.435 (0.335-0.535)	0.202	0.2	100	4
SIII value	0.717 (0.627-0.806)	<0.001	570.7	73	68

***AUC:** Area Under Curve ****CI:** Confidence interval

Materials & Methods:

All patients who presented with acute scrotum between January 2020 and December 2024 were included in the sample and retrospectively reviewed. 67 patients who presented with testicular torsion, 61 patients who presented with epididymo-orchitis, and 60 patients diagnosed with uncomplicated inguinal hernia were included in the study as the control group.

The mean SIII of patients who presented with testicular torsion was 1181 (91-4499), the mean SIII of patients who presented with epididymo-orchitis was 936 (144-3385), and the mean SIII of the control group, who underwent elective surgery for inguinal hernia, was 443 (104-1927). The mean SIII value for patients with testicular torsion was higher than that for the epididymo-orchitis group, and the mean SIII value for the epididymo-orchitis group was higher than that for the control group (p<0.001)



Conclusion:

The SIII value is a simple blood test that can be performed at any healthcare center. We believe that this value will enable the differentiation of testicular torsion from acute scrotum in patients presenting with acute scrotum through a blood test.