RENAL INJURY AND NEUTROPHIL-TO-LYMPHOCYTE RATIO IN HENOCH-SCHONLEIN PURPURA

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Introduction

Henoch-Schonlein purpura (HSP) is a systemic vasculitis whose long-term prognosis is related to renal impairment.

Few biological factors are known to predict renal impairment.

The objective of this study was to evaluate the neutrophil-to-lymphocyte ratio (NLR) as a predictor of kidney damage in children with HSP.

Method

114 patients with a diagnosis of HSP were included over a retrospective period of five years.

The clinical and biological data collected were those found at the time of HSP diagnosis. Renal impairment ranged from isolated proteinuria to nephrotic syndrome.

Results

Renal involvement occurred in 33 patients (29%). In univariate analysis, the median NLR was significantly higher in cases of renal impairment (1.8 vs. 4.1, $p < 0.001$). In multivariate analysis, the risk factors for renal impairment were: age greater than eight years (OR = 3, $p = 0.02$, CI 1.2 to 7.8), presence of abdominal pain (OR = 4.9, $p = 0.005$, CI 1.6 to 14.9) and an NLR greater than 2.5 (OR = 3.5, $p = 0.01$, 1.3-1.1 IC). The combination of these three factors was found in 71% of children with renal impairment.

Conclusion

Patients with elevated NLR at the time of HSP diagnosis appear to have an increased risk of developing kidney injury and require regular monitoring.

The NLR could also be evaluated in case of relapse.

As the renal biopsy is not always enough to predict the evolution of injury, NLR included in a biological and clinical score could be studying.

Clinical data			
	No renal impairment (n=81)	Renal impairment (n=33)	p
Mean age	6,4 (± 2,9)	8,6 (±2,9)	0,01
Male	42 (51,9%)	22 (66,7%)	0,148
Arthritis or arthralgia	73 (90,1%)	31 (93,9%)	0,514
Abdominal pain	38 (46,9%)	28 (84,8%)	<0,001

Univariate comparison of CBC at diagnosis of HSP			
	No renal involment (n=81)	Renal involment (n=33)	p
WBC (G/L)	10,9 (8,7-13,4)	12 (9,2-14)	0,415
Neutrophils (G/L)	6,2 (4,3-8,9)	8,3 (5,6-10,6)	0,01
Lymphocytes (G/L)	3,2 (2,4-4,3)	2,3 (1,8-3,1)	0,001
NLR	1,8 (1,2-3)	4,1 (2,3-5,2)	<0,001

Multivariate analysis at diagnosis of HSP				
Risks Factors	No renal impairment (n=81)	Renal impairment (n=33)	p	OR (IC 95%)
Male	42 (51,9%)	22 (66,7%)	0,894	
Age > 8y	18 (22,2%)	18 (15,8%)	0,022	3 (1,2-7,8)
Abdominal pain	38 (46,9%)	28 (84,8%)	0,005	4,9 (1,6-14,9)
NLR >2,5	29 (35,8%)	24 (72,7%)	0,011	3,5 (1,3-9,1)