

IRON STATUS OR WHITE BLOOD CELLS COUNT WITH RELATIVES RATIO: WHICH IS THE BEST PREDICTOR IN ISCHEMIC PATIENT TREATED WITH rTPA?

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Background and aims

Several studies have investigated the role of the inflammatory response after a stroke in predicting outcomes, focusing separately on the leukocyte formula and iron balance. However, there's a lack of comparative data on the patterns of these markers in a cohort of patients with exclusively ischemic strokes treated (tIS) with rTPA.

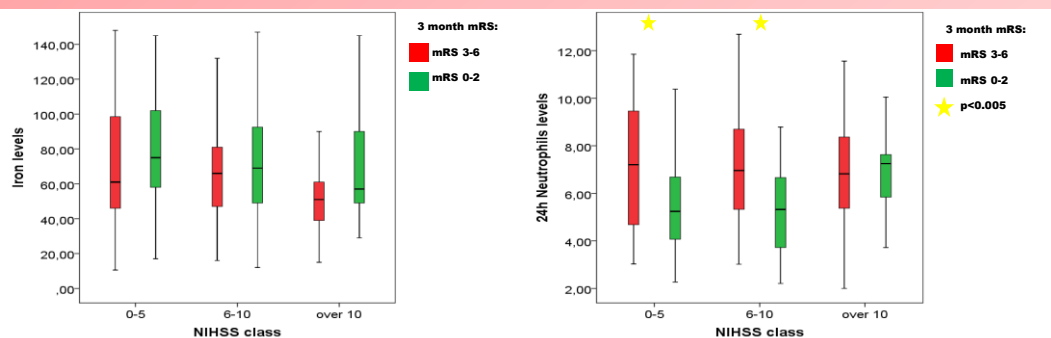
Materials and methods

We analysed demographic-clinical features (sex, age, comorbidities, Bamford classification, NIHSS and mRS) and markers of inflammation (PCR, ESR, iron, ferritin, transferrin saturation, leukocyte formula and related ratios). We excluded patients with active infection, chronic renal failure, autoimmune disease. We compared the characteristics in terms of mRS at 3 months. A multivariate inferential analysis was performed to describe the independent factors of poor outcome.

Results

	Unfavorable Outcome n = 68	Favorable Outcome (mRS 0-2) n = 160	Sig.
[median (IQR)]			
PCR	5.45 (2.75-11.3)	4.2 (1.6-7.95)	p=0.018
Ferritin	88.75 (40.4-123.1)	63.10 (31.2-138.6)	p=0.274
Transferrin Saturation	19.14 (9.66-34.11)	20.32 (8.28-31.5)	p=0.131
Iron	56.5 (44.5-79)	74 (53-101)	p=0.001
WBC	8.75 (7.09-11.84)	8.02 (6.70-9.67)	p=0.018
Neutrophil (N)	6.96 (5.18-8.85)	5.34 (4.06-7.08)	p<0.001
Lymphocytes (L)	1.26 (0.91-1.75)	1.64 (1.23-2.18)	p=0.001
Monocyte (M)	0.71 (0.5-0.89)	0.69 (0.55-0.8)	p=0.717
Eosinophil (E)	0.02 (0-0.11)	0.10 (0.03-0.19)	p<0.001
N/L ratio	4.88 (3.11-8.18)	3.15 (2.21-5.07)	p<0.001
P/L ratio	168.23 (119.63-249.81)	145.40 (110.72-211)	p=0.221
M/L ratio	0.54 (0.36-0.76)	0.41 (0.31-0.54)	p<0.001

Among 228 patients included, 68 (30%) had poor outcome (group1) and 120 favorable for mRS 0-2 (group2). The prevalence of Atrial fibrillation (p=0.019), diabetes (p=0.002), hypertension (p=0.031), the levels of PCR and WBC (p=0.018), neutrophils, N/L ratio, P/L ratio and M/L ratio (p<0.001) were higher in group 1. Instead lymphocytes and eosinophils were higher in group2, p<0.001. About the iron status, sideremia were significantly higher in group2 (p=0.001). After adjustment, neutrophil count remains significant (OR 0.325, CI95% 0.127-0.831, p=0.019), instead serum iron was not associated (OR 0.997, CI95% 0.986-1.009, p=0.675). A trend was found in favor of NLR (OR 1.252, CI95% 0.995-1.576, p=0.055), which is a predictor of a bad outcome.



Discussion and Conclusions

In thrombolysed patients, neutrophil count and NLR are an independent predictive factor for mRS at 3 months, whereas iron levels don't show this association. More studies are suggested to better investigate this association as a predictive marker and its possible use in clinical practice.

References

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Disclosures Nothing to disclose.