AB1312

TIME-COURSE CHANGE OF NEUTROPHIL-LYMPHOCYTE RATIO, MONOCYTE-LYMPHOCYTE RATIO AND PLATELET-LYMPHOCYTE RATIO IN PSORIATIC ARTHRITIS PATIENTS AND RESPONSE TO BIOLOGIC THERAPY

Raquel Ferreira, Sara Ganhão, Salomé Garcia, Bruno Miguel Fernandes, Sofia Pimenta, Miguel Bernardes, Lúcia Costa. São João Hospital Centre, Porto, Portugal

Background: Recently, systemic inflammation has been shown to be a key determinant of prognosis. Neutrophil-lymphocyte ratio (NLR), monocyte-lymphocyte ratio (MLR), and platelet-lymphocyte ratio (PLR) has been related to inflammation status and suggested as additional markers of response to bDMARDs in patients with rheumatoid arthritis. However, few studies were yet developed about this subject in psoriatic arthritis (PsA).

Objectives: The aim of this study was to investigate the time-course change of NLR, MLR and PLR levels in PsA patients after 6 and 12 months of bDMARD therapy and to evaluate their clinical significance and utility in monitoring response to biologic agents.

Methods: An observational retrospective study was performed in patients with PsA under bDMARD, followed at our Rheumatology department until December 2018. Demographic and clinical data were collected from the national database. C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and total blood count were consulted before and after 6 and 12 months of biologic treatment and NLR, MLR and PLR were calculated by dividing neutrophil, monocyte and platelet count by lymphocyte count, respectively. Disease activity was evaluated with DAS28 and ASDAS. The variation of each parameter was calculated as the difference between the levels registered at 6 and 12 months and the baseline and presented as Δ . Correlation between Δ NLR, Δ MLR and Δ PLR with Δ CRP and Δ ESR levels, Δ DAS28 and Δ ASDAS was calculated using the Spearman's test.

Results: A total of 83 patients were included. Forty-three were females (51.8%). The mean age at diagnosis was 41 years (± 11.3) and the median disease duration at start of biological therapy was 6.9 years (min:1.4; max:32.4). In total, 67.5% of the patients had axial involvement (n=56), 91.6% articular involvement (n=76) and 43.4% enthesopathic involvement (n=36). Almost all patients fulfilled the CASPAR criteria for PsA (n=78; 94%). At the baseline, 25 patients (30.1%) had high disease activity and 45 patients (54.2%) very high disease activity according to ASDAS criteria. The most used bDMARD was etanercept (n=29; 35%), followed by golimumab (n=26; 31%), adalimumab (n=16; 19%) and infliximab (n=8; 10%). Certolizumab was administered to 2 patients and secukinumab to others 2 patients. Fifty-nine patients were concomitantly treated with csDMARDs. The median value of CPR was 1.5mg/dL [0.03-30], 0.26 [0.03-11] and 0.37 [0.02-19] at baseline, 6 and 12 months, respectively. The median value of ESR was 33mm/hr [4-98], 11 [2-75] and 10 [1-68] at baseline, 6 and 12 months, respectively. We realize that NLR, MLR and PLR decreased after 6 months of treatment and remained relatively stable at 12 months (NLR median: 2.6 [0.1-8.8], 1.6 [0.5-5.3], 1.6 [0.5-8]; MLR median: 0.32 [0.11-250], 0.23 [0-7.4], 0.25 [0.05-1]; PLR median: 132 [69.6-342.5], 97.6 [33.4-415.1], 98.6 [38.3-528.6] at baseline, 6 and 12 months, respectively). A significant positive correlation was found between Δ NLR and Δ CRP at 6 months ($r=0.272$; $p=0.016$) and also between Δ MLR and Δ CRP at 6 and 12 months ($r=0.309$, $p=0.006$; $r=0.364$, $p=0.002$). Δ PLR showed a statistically significant correlation only with Δ ESR at 6 months ($r=0.312$; $p=0.006$). No correlation was found between Δ NLR, Δ MLR and Δ PLR with Δ DAS28 or between Δ NLR, Δ MLR and Δ PLR with Δ ASDAS at evaluation of 6 and 12 months.

Conclusion: Our data showed that NLR, MLR decreased promptly in parallel with decrease of CRP and PLR with ESR for up 6 months of therapy with biologics. This results, in agreement with the literature, suggests that NLR, MLR and PLR may be seen as a useful marker for demonstrating systemic inflammation in PsA patients. Further studies are needed to better emphasize the importance of these parameters and to evaluate their utility to monitor the effectiveness of biologic therapy.

Disclosure of Interests: None declared

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AB1313

NMR SPECTROSCOPY REVEALS ALTERATIONS OF URINARY ACETATE AND CITRATE LEVELS FOLLOWING CYCLOPHOSPHAMIDE THERAPY IN PATIENTS WITH LUPUS NEPHRITIS

Sujata Ganguly^{1,1}, Umesh Kumar², Nikhil Gupta², Anupam Guleria², Sanjukta Majumdar¹, Sanat Phatak¹, Smriti Chaurasia¹, Amita Aggarwal¹, Dinesh Kumar², Ramnath Misra¹. ¹Sanjay Gandhi Postgraduate Institute of Medical Sciences, Department of Rheumatology and Clinical Immunology, Lucknow, India; ²Centre of Biomedical Research, Lucknow, India

Background: Metabolomics, the study of global alterations in small metabolites is a useful tool to look for novel biomarkers. Recently, we reported a reprogramming of the serum metabolomic profile on nuclear magnetic resonance(NMR) spectroscopy following treatment in Lupus Nephritis (LN) [1].

Objectives: We explored urinary parameters using NMR Spectroscopy in patients with biopsy proven proliferative lupus nephritis. Change in parameters after 6 months Cyclophosphamide induction treatment and its correlation with disease activity was assessed.

Methods: Urine obtained from Lupus Nephritis (n=18, F=16,M=2) at diagnosis and following induction therapy with cyclophosphamide, and healthy controls (n=18, median age 35,all females) were stored at -80 °C. Metabolomic profiling was done using high resolution 800 MHz 1D 1H NMR spectroscopy. Urinary ratio of metabolites was calculated- (Metabolite $\times 1000$)/Creatinine. Disease activity was measured using SLEDAI. Metabolomic profiles were compared between groups and correlated with clinical parameters using SPSS.

Results: Urinary metabolomic fingerprint of LN patients differed from healthy controls by having significantly raised urinary acetate/creatinine (LN=41.84 $\pm$ 100.6, HC=12.36 $\pm$ 9.40, $p<0.002$) and reduced urinary citrate/creatinine (LN=34.22 $\pm$ 54.8, HC=114.5 $\pm$ 70.09, $p<0.0001$). Urinary citrate (88.68 $\pm$ 98.33) increased after 6 months of Cyclophosphamide, while urinary acetate showed a trend towards decrease(14.77 $\pm$ 9.98). AUC for urinary citrate/creatinine and acetate/creatinine were 0.9136 and 0.8086. The urinary acetate levels correlated with SLEDAI ($r=0.337$, $p=0.048$). Urinary citrate levels correlated with C3 ($r=0.362$, $p=0.03$) and negatively correlated with uPCR ($r=-0.346$, $p=0.039$).

Conclusion: The decreased urinary citrate mirrors the finding seen in serum of the patients done earlier which reflects dampened aerobic glycolysis and oxidative phosphorylation.(1) Raised urinary acetate levels possibly reflects proximal renal tubular injury leading to increased urinary excretion.(2). Change in levels with treatment show that urinary metabolomics parameters are potential noninvasive biomarkers for diagnosis and monitoring treatment response in LN

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Metabolite	SLEDAI		rSLEDAI		C3		C4		PCR	
	r	p	r	p	r	p	r	p	r	p
Acetate	0.337	0.048	0.22	0.205	-0.084	0.625	-0.097	0.573	0.003	0.988
Citrate	-0.314	0.066	-0.234	0.175	0.362	0.03	0.007	0.969	-0.346	0.039

Table 1. Showing correlation of urinary metabolites with clinical parameters

Figure: The box plot representation of Urinary Citrate/Cre and Acetate/Cre ratios obtained for different study groups: LN (in blue), LNT (in red) and NC (green). The significantly higher p-values and area under the ROC curve (AUCROC) between LN and NC groups demonstrated the diagnostic potential of these urinary ratios. The table on the right side shows the correlation analysis parameters between urinary metabolic profiles and clinical parameters.

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