AB0274

ASSOCIATION OF SERUM PENTOSIDINE LEVELS WITH INTIMA MEDIA THICKNESS IN PATIENTS WITH RHEUMATOID ARTHRITIS

M. Kerkeni¹, I. knani¹, O. Ben Omrane Sioud¹, H. Bouzidi², S. Zrour³, S. Hammami¹, M. hammami¹. ¹Laboratory Biochemistry LR12ES05, Faculty of Medicine, University of Monastir, Monastir; ²Laboratory Biochemistry, CHU Tahar Sfar, Mahdia; ³Rheumatology department, CHU Fattouma Bourguiba, Monastir, Tunisia

Background: Advanced glycation end products (AGEs) are formed by a nonenzymatic glycation process. Previously, we showed that pentosidine, as AGEs, was related to the severity of coronary artery disease (Kerkeni et al. 2014). Recently, we showed that AGEs are involved with disease activity in rheumatoid arthritis (RA) (Knani et al. 2017, 2018). No study about the relationship between serum pentosidine levels and intima media thickness (IMT) was evaluated.

Objectives: We aim to study the association of serum pentosidine levels with IMT in RA patients.

Methods: Our study included 30 control subjects and 40 patients with RA. The carotid IMT was measured using ultrasonography and serum pentosidine levels were determined by ELISA kit.

Results: Serum pentosidine levels were increased in RA patients vs control subjects ($p<0.001$) and were increased with disease activity score (DAS28) ($p<0.001$). IMT was increased with disease activity in RA patients ($p<0.01$) and was positively associated with serum pentosidine levels ($p<0.001$).

Conclusions: Serum pentosidine levels were increased with DAS28 and were associated with carotid IMT.

REFERENCES:

- [1] Kerkeni M, Weiss IS, Jaisson S, et al. Increased serum concentrations of pentosidine are related to presence and severity of coronary artery disease. *Thromb Res*. 2014; 134:633–8.
- [2] Knani I, Bouzidi H, Zrour S, Bergaoui N, Hammami M, Kerkeni M. Increased serum concentrations of N ϵ -carboxymethyllysine are related to the presence and the severity of rheumatoid arthritis. *Ann Clin Biochem* 2017(In Press).
- [3] Knani I, Bouzidi H, Zrour S, Bergaoui N, Hammami M, Kerkeni M. Methylglyoxal, a relevant marker of disease activity in patients with rheumatoid arthritis. *Dis. Markers* 2018 (In Press).

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2254

AB0275

THE MULTI-BIOMARKER DISEASE ACTIVITY SCORE TRACKS RESPONSE TO RITUXIMAB TREATMENT IN RHEUMATOID ARTHRITIS PATIENTS

N.M.T. Roodenrijs¹, M.J.H. de Hair¹, G. Wheeler², M. Elshahaly³, J. Tekstra¹, Y.K. O. Teng⁴, C.C. Hwang⁵, X. Liu⁵, E.H. Sasso⁵, J.M. van Laar¹. ¹Department of Rheumatology and Clinical Immunology, University Medical Center Utrecht, Utrecht, Netherlands; ²Department of Biochemistry, The James Cook Hospital, Middlesbrough, UK; ³Department of Rheumatology and Rehabilitation, Suez Canal University, Ismailia, Egypt; ⁴Department of Nephrology, Leiden University Medical Center, Leiden, Netherlands; ⁵Crescendo Bioscience, San Francisco, CA, USA

Background: A multi-biomarker disease activity (MBDA) score was developed to objectively measure disease activity for patients with rheumatoid arthritis (RA).¹ The MBDA score is calculated by an algorithm using concentrations of 12 serum biomarkers. The MBDA score has been shown to track response to treatment with several DMARDs.^{2,4}

Objectives: To assess the ability of the MBDA score to track response to rituximab treatment in RA patients.

Methods: Data were used from 3 cohorts (1 in the United Kingdom, 2 in the Netherlands) of RA patients treated with rituximab 1000 mg and methylprednisolone 100 mg at days 1 and 15. The MBDA score was assessed in serum samples at baseline (BL, n=57) and at 6 months (n=46). Wilcoxon signed-rank test was used to statistically compare the medians at BL and 6 months. Spearman's rank correlation (ρ) was used to analyse relationships between BL and 6 month values and change (Δ) from BL to 6 months for MBDA score vs. the following endpoints: DAS28-ESR, DAS28-hsCRP, ESR, hsCRP and Health Assessment

Questionnaire (HAQ). Logistic regression analysis with adjustment for age, sex, smoking, ACPA and RF was used to assess the association between Δ MBDA score and non-response, using EULAR response categories at Month 6. $p<0.05$ was considered statistically significant.

Results: At baseline the median MBDA score and DAS28-ESR were 54.5 (range 15.0–84.0) and 6.3 (range 2.5–8.4), respectively. The improvement in both scores after 6 months was statistically significant ($p=0.003$ and $p<0.0001$, respectively). MBDA score correlated with DAS28-ESR, DAS28-hsCRP, ESR and hsCRP at BL and Month 6 (table 1). Δ MBDA score from BL to Month 6 correlated with changes in these measures, except for the correlation with Δ DAS28-hsCRP ($\rho=0.419$, $p=0.053$). Spearman's correlation for Δ MBDA score vs. Δ DAS28-ESR was $\rho=0.548$, $p<0.0001$ (table 1). Δ MBDA score also correlated with EULAR non-response (n=39), with adjusted OR=1.115 (95% CI=1.017–1.223, $p=0.015$), which corresponds to an OR of 2.97 for every 10-unit change in MBDA score. Correlations were not observed between MBDA scores or Δ MBDA score and the corresponding HAQ measurements (table 1).

Abstract AB0275 – Table 1. Correlations (Spearman's ρ) between the MBDA score and clinical or biomarker endpoints based on measurements made at baseline (BL) or 6 months (6M), and of change (Δ) from BL to 6 months.

Endpoint	Timepoint or period for comparison with MBDA score	Available samples (N)	Spearman's ρ	p-value
DAS28-ESR	BL	46	0.487	0.001
	6M	40	0.478	0.002
	Δ	37	0.548	<0.0001
ESR	BL	44	0.765	<0.0001
	6M	41	0.670	<0.0001
	Δ	41	0.448	0.006
DAS28-hsCRP*	BL	23	0.488	0.015
	6M	23	0.488	0.032
	Δ	23	0.419	0.053
hsCRP*	BL	24	0.801	<0.0001
	6M	23	0.814	<0.0001
	Δ	23	0.678	0.001
HAQ	BL	39	-0.031	0.854
	6M	40	-0.056	0.730
	Δ	33	0.132	0.466

BL: MBDA score and endpoint at baseline; 6M: MBDA score and endpoint at Month 6; Δ : changes in MBDA score and endpoint, both from baseline to Month 6; DAS28: disease activity score using 28 joints; ESR: erythrocyte sedimentation rate; HAQ: Health Assessment Questionnaire; hsCRP: high-sensitivity C-reactive protein; MBDA: multi-biomarker disease activity.

* United Kingdom cohort only

Conclusions: We have shown, for the first time, that the MBDA score tracked disease activity in RA patients treated with rituximab and that change in MBDA score reflected the degree of treatment response.

REFERENCES:

- [1] Centola M, et al. Development of a Multi-Biomarker Disease Activity Test for Rheumatoid Arthritis. *PLoS One* 2013;8(4).
- [2] Bakker MF, et al. Performance of a multi-biomarker score measuring rheumatoid arthritis disease activity in the CAMERA tight control study. *Ann Rheum Dis*. 2012;71(10):1692–7.
- [3] Jurgens MS, et al. The Multi-biomarker Disease Activity Test for Assessing Response to Treatment Strategies Using Methotrexate with or without Prednisone in the CAMERA Trial-II 2014;81–98. ISBN:978–94–6259–393–0.
- [4] Hirata S, et al. A multi-biomarker disease activity score tracks clinical response consistently in patients with rheumatoid arthritis treated with different anti-tumor necrosis factor therapies: A retrospective observational study. *Mod Rheumatol* 2015;25(3):344–9.

Disclosure of Interest: N. Roodenrijs: None declared, M. de Hair: None declared, G. Wheeler: None declared, M. Elshahaly: None declared, J. Tekstra: None declared, Y. Teng: None declared, C. Hwang Employee of: Crescendo Bioscience, X. Liu Employee of: Crescendo Bioscience, E. Sasso Shareholder of: Myriad Genetics, Employee of: Crescendo Bioscience, J. van Laar Grant/research support from: Arthrogeen, MSD, Pfizer, Eli Lilly, BMS, Astra Zeneca, Roche-Genentech

DOI: 10.1136/annrheumdis-2018-eular.1981