AB0222

ASSOCIATION BETWEEN CENTROMERE AND TOPOISOMERASE SPECIFIC IMMUNE RESPONSES AND THE DEGREE OF MICROANGIOPATHY IN SYSTEMIC SCLEROSIS

Nina van Leeuwen¹, Jaap Bakker², Corrie Wortel¹, Hans Ulrich Scherer¹, Rene Toes¹, Thomas Huizinga¹, Jeska de Vries-Bouwstra¹. ¹Leiden University Medical Center, Rheumatology, Leiden, Netherlands; ²Leiden University Medical Center, Clinical Chemistry, Leiden, Netherlands

Background: In systemic sclerosis (SSc) more severe microangiopathy has been associated with worse disease outcome. In addition, auto-antibodies are important tools for disease prognostication. To what extent these two biomarkers reflect the same pathophysiological background is not clear. A better understanding of the interaction between the specific auto-immune response and the degree of microangiopathy could not only improve our insight in disease pathophysiology but could also contribute to more reliable disease prognostication. We hypothesized that an ongoing activated immune response, as reflected by higher anticentromere antibody (ACA) or anti-topoisomerase (ATA) specific IgG levels and higher number of ACA or ATA specific isotypes, associates with more severe microvascular damage and with more severe SSc.

Objectives: 1. To evaluate whether ACA and ATA isotype expression associates with the degree of microangiopathy in SSc. 2. To determine the additive value of more activated immune response for prediction of organ involvement.

Methods: ACA and ATA IgG, IgA and IgM levels were measured in serum samples of 129 ACA IgG+ or 102 ATA IgG+ SSc patients, respectively. The degree of microangiopathy was determined based on nailfold videocapillaroscopy (NVC) images, with SSc late pattern reflecting more severe microangiopathy. Associations between ATA and ACA isotype expression and NVC patterns were evaluated. Logistic regression analyses, with NVC pattern, autoantibodies, isotype expression and IgG levels as independent and disease characteristics as dependent variables were performed, adjusted for age, sex and disease duration.

Results: NVC images were available for 164 patients (n=100 ACA, n=64 ATA). Prevalence of SSc early, active and late pattern did not differ between ACA/ATA IgM+ and IgM – patients, nor between ACA/ATA IgA+ and IgA – patients. No associations between isotype expression (Figure 1) or IgG levels and NVC patterns were found. Logistic regression confirmed the association of ATA with pulmonary involvement (multivariable Odds Ratio [OR] 9.0 range 2.3-34.5) and of late SSc pattern with digital ulcers (multivariable OR 12.0 range 3.0-48.0) and pulmonary involvement (multivariable OR 5.0 range 1.5-16.1). Of note, higher topoisomerase and centromere specific IgG levels were independently associated with presence of digital ulcers (OR 3.5 range 1.1-11.0).

Conclusion: We did not observe an association between the quality of the anti-centromere specific or the anti-topoisomerase specific immune response and degree of microangiopathy in SSc patients. This might indicate that specific autoantibodies and stage of microangiopathy reflect different processes in the disease. The association between higher ATA or ACA specific IgG levels with digital ulcers, independent of specific

autoantibody and NVC patterns suggests that an ongoing, active immune response is associated with more severe organ involvement.

Figure 1. SSc patterns on nailfoldvideocapillaroscopy (NVC) stratified for number of isotypes expressed.

Figure 1

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AB0223

ASSESSMENT OF DISEASE ACTIVITY IN SYSTEMIC SCLEROSIS: THE COMPARISON BETWEEN REVISED EUSTAR AND ESCSG ACTIVITY INDEXES

Yasemin Yalçinkaya¹, Ümmügölsüm Gazel¹, Sema Kaymaz Tavra¹, Aysun Aksoy¹, Murat Karabacak¹, Seda Kutluğ¹, Özlem Pehlivan², Fatma Alibaz-Oner¹, Pamir Atagündüz¹, Nevsun Inanc¹, Haner Direskeneli¹. ¹Marmara University, Internal Medicine, Division of Rheumatology, Istanbul, Turkey; ²Ümraniye Education and Research Hospital, Istanbul, Turkey

Background: Assessment of disease activity in systemic sclerosis (SSc) is challenging and usually hard to distinguish from damage or chronicity.

Objectives: We aimed to evaluate disease activity by different indexes and compare them in a SSc cohort.

Methods: Disease activity was evaluated by revised EUSTAR (European Scleroderma Trials and Research group) and ESCSG (European Scleroderma Study Group) activity indexes in 131 SSc patients fulfilling ACR/EULAR classification criteria (2013). The patients with the scores of EUSTAR activity index ≥ 2.5 or ESCSG activity index ≥ 3 were accepted as having active disease.

Table 1

	ATA Late NVC n=18	ATA Other NVC n=46	ACA Late NVC n=15	ACA Other NVC n=85
Female, n(%)	13 (72)	34 (74)	14 (93)	75 (88)
Age, mean (SD)	60 (14)	50 (15)	64 (11)	57 (13)
Since non RP, median(IQR)	6 (0-12)	2 (1-4)	15 (8-26)	4 (1-10)
DcSSc, n(%)	6 (33)	14 (30)	0 (0)	0 (0)
Digital Ulcers, n(%)	4 (22)	6 (13)	10 (67)	16 (19)
Pulmonary involvement, n(%)	5 (28)	3 (7)	2 (13)	5 (6)
Cardiac involvement, n(%)	4 (22)	7 (15)	4 (27)	8 (9)
PAH, n(%)	5 (28)	3 (7)	2 (13)	5 (6)
IgA positivity, n(%)	18 (100)	46 (100)	10 (67)	61 (72)
IgA level [aU/mL], median (IQR)	1810 (890-6868)	2782 (1148-9399)	102 (23-178)	67 (34-141)
IgM positivity, n(%)	14 (78)	30 (65)	12 (80)	65 (77)
IgM level [aU/mL], median (IQR)	1514 (492-7719)	693 (325-1818)	50 (23-1210)	110 (14-571)
IgG level [aU/mL], median (IQR)	394 (164-641)	498 (167-869)	630 (181-1094)	375 (169-1027)