Background: Tacrolimus (TAC), an immunosuppressant, can be used in second-line maintenance therapy for interstitial lung disease (ILD) in patients with dermatomyositis (DM) [1]. Although some studies reported the clinical efficacy of initial high-trough levels of TAC in combination with GC and IVCY in induction therapy for severe DM-ILD [2], there have been no useful clinical tools for deciding suitable initial dose of TAC. Genotype of polymorphisms in cytochrome P450 (CYP) 3A5 enzyme was reported to play an important role in pharmacokinetics of TAC [3], and we made a formula for deciding initial dose of TAC according to CYP3A5 genotypes in our previous study.

Objectives: In our previous study (retrospective study), we set the target trough according to the severity for nine DM-ILD patients, six of whom were CYP3A5 *3/*3 and investigated the dose of TAC that could attain the trough using their CYP3A5 genotyping. Using these results, we developed a formula for deciding initial daily dose of TAC (target trough*weight / [(151.1, if CYP3A5 *3/*3) or (86.5, if CYP3A5 *1 allele)]).

Methods: We introduced TAC for new six DM-ILD patients who visited our hospital between November 2019 and May 2020 (prospective study). The starting dose of TAC was decided by using the formula. We assessed the association between predicted and observed trough concentration of TAC at first measurement date (from day 2 to day4), using linear regression analysis. We also assessed the days for attaining the target trough concentration between the patients using the formula (prospective group) and six patients with CYP3A5 *3/*3 (retrospective group).

Results: CYP3A5 genotype of all six DM-ILD patients were *3/*3 and underwent the TAC treatment by using the formula. The predicted and observed trough concentration of first measurement date were significantly correlated in the patients ($r = 0.897$, $p = 0.0041$) (Fig.1). Compared with our retrospective study, target trough was more quickly attained in patients of the prospective study (Fig.2).

Conclusion: The formula which we made for attainment target trough concentration based on CYP3A5 genotype was useful for deciding the starting dose of TAC. We also showed that we could attain the target trough concentration at early stage of initial treatment by using the formula.

REFERENCES:

- [1] Oddis CV and Aggarwal R. Nat Rev Rheumatol 2018;14(5):279-89.
- [2] Suzuka T et al. Int J Rheum dis 2019;22: 303-13.
- [3] Y. Muraki et al. Exp Ther Med 2018;15:532-38.

Figure 1. Correlation of predicted and observed tacrolimus trough concentration at first measurement in the prospective study

Figure 2. Days to attain the target trough concentration of tacrolimus in the prospective group and the retrospective group

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POS0869

PREDICTIVE VALUE OF ANTI-INTERFERON-INDUCIBLE PROTEIN 16 ANTIBODIES FOR DIGITAL ULCERS OF SYSTEMIC SCLEROSIS

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Background: Interferon-inducible protein 16 (IFI-16) is constitutively expressed in vascular endothelial cells and can inhibit the proliferation of human endothelial cells and the formation of capillary-like structures *in vitro*. Anti-IFI-16 antibodies were reported in 21%-29% of patients with systemic sclerosis (SSc) and were associated with digital vascular events in a few retrospective studies.

Objectives: To evaluate the presence and the clinical implication of anti-IFI-16 antibodies in Chinese SSc cohort, focusing on the associations with vasculopathy indexes, and to investigate the predictive value of anti-IFI-16 antibodies for the development of digital ulcers (DUs) in SSc prospectively.

Methods: Patients with SSc presenting to our center between July 2018 and September 2018 were prospectively enrolled. Serum from 42 SSc patients and 42 age- and sex-matched healthy controls were analyzed for anti-IFI-16 antibodies by enzyme-linked immunosorbent assay (ELISA), and was considered positive if the optical density (OD) value was above the mean OD of controls plus two standard deviations. Tissue immunofluorescence was used to evaluate the expression of IFI16 in skin biopsy samples obtained from SSc patients and normal controls. At baseline, nailfold video-capillaroscopy was performed to assess nailfold capillary density of SSc patients. Power Doppler ultrasound was used to grade finger pulp blood flow (0-no observed flow; 1-decreased flow; 2-normal flow), and to measure ulnar and radial artery blood flow and resistive index (RI). All patients were followed up for 6 months to see whether they experienced new onset or recurrent DUs. The association of anti-IFI-16 antibodies with DUs was analyzed using logistic regression.

Results: Of the 42 SSc patients, 8 (19.0%) were positive for anti-IFI-16 antibodies. Immunofluorescence of skin biopsy samples from SSc patients exhibited enhanced staining of IFI-16 in the dermis, and colocalization with endothelial marker CD31. SSc patients who were positive for anti-IFI-16 antibodies showed higher ulnar artery RI at baseline (0.95 ± 0.09 vs. 0.86 ± 0.09 , $p = 0.015$), while no significant differences were found for other vascular parameters, nor for clinical or demographic profiles. Within 6-month follow-up, 14 (33.3%) patients experienced new-onset or recurrent DUs. Univariate logistic regression revealed the presence of DUs at enrollment ($p = 0.009$), anti-IFI-16 antibody ($p = 0.012$), finger pulp blood flow ($p = 0.027$), and ulnar artery RI ($p = 0.008$) could be the predictors for the development of DUs. Multivariate analysis further identified DUs at enrollment (odds ratio [OR]: 10.85; 95% confidence interval [CI]: 1.61-73.18; $p = 0.014$) and anti-IFI-16 antibody (OR: 15.00; 95% CI: 1.13-199.18; $p = 0.040$) as independent risk factors. Among patients without DUs at enrollment, new-onset ulcers occurred in 80% (4/5) and 4.5% (1/22) of those with and without anti-IFI-16 antibody, respectively ($p = 0.001$).

Conclusion: Anti-IFI-16 antibody is associated with vasculopathy in SSc and could be used as a novel biomarker for indicating the development of DUs.

REFERENCES:

- [1] McMahan ZH, Shah AA, Vaidya D, et al. Anti-interferon-inducible protein 16 antibodies associate with digital gangrene in patients with Scleroderma. Arthritis Rheumatol. 2016; 68(5): 1262-71.
- [2] McMahan ZH, Cottrell TR, Wigley FM, et al. Autoantigens targeted in scleroderma patients with vascular disease are enriched in endothelial lineage cells. Arthritis Rheumatol. 2016; 68(10): 2540-49.

Figure 1. Multivariate logistic analysis for new or recurrent digital ulcers.

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POS0870

CLINICAL CHARACTERIZATION OF PORTUGUESE PATIENTS WITH ANTISYNTHEASE SYNDROME

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Background: Antisynthetase syndrome (ASyS) may have different clinical phenotypes and outcomes associated with different anti-aminoacyl RNA-synthetase (anti-ARS) antibodies. Its wide clinical spectrum can include inflammatory myopathy, interstitial lung disease (ILD), arthritis, fever, mechanic's hands, and Raynaud phenomenon (RP). **Objectives:** To describe a nationwide, multicentre cohort of Portuguese patients with ASyS. **Methods:** Retrospective analysis of patients with ASyS from nine Portuguese Rheumatology centers. Data on patients' signs and symptoms, laboratory results, pulmonary radiological findings (computed tomography) and treatment (immuno-modulators) were collected.

Results: Among the 70 patients included, 42 patients (60%) were anti-Jo1-positive, 11 (15.7%) were anti-PL12-positive, 10 (14.3%) were anti-PL7-positive, 4 (5.7%) were anti-EJ-positive and 2 (2.9%) were anti-OJ positive. In one patient it was not possible to identify the type of antibody. Antibody overlap was found in 15 patients (21.4%), who were positive for anti-Ro52 antibodies. The general clinical characteristics are shown in Table 1. The diagnostic delay was greater in patients positive for anti-OJ, followed by anti-Jo-1 and anti-PL12. The follow-up was shorter for anti-PL7 and anti-OJ-positive patients. Anti-PL7-positive patients had lower rates of arthritis when compared to anti-Jo1 ($p < 0.01$). When compared with anti-Jo-1 ARS, myositis was less common in anti-PL12 ($p < 0.01$). ILD prevalence was similar in the different ARS subgroups. Glucocorticoids (GCs) were the most frequently used class of drugs. A more conservative treatment plan (e.g. GCs plus methotrexate or azathioprine) was the treatment of choice in ASyS with myositis and/or arthritis involvement. Rituximab or mycophenolate mofetil were preferred when lung involvement occurred. Only two deaths were reported, being one associated with lung neoplasia.

Conclusion: This is the first study investigating the clinical phenotypes of Portuguese patients with ASyS. These results are generally concordant with data retrieved from international cohorts.

REFERENCES:

- Mahler M, Miller FW, Fritzler MJ. Idiopathic inflammatory myopathies and the anti-synthetase syndrome: a comprehensive review. *Autoimmun Rev* 2014;13:367–71.

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POS0871

CHARACTERISTICS OF INTERSTITIAL LUNG DISEASE IN PATIENTS WITH SYSTEMIC SCLEROSIS DURING LONG TERM FOLLOW-UP, SINGLE CENTER EXPERIENCE

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Background: ILD is one the leading causes of morbidity and mortality in patients with SSc. Diagnosis of SSclILD is based on signs of fibrosis on chest x-rays or HRCT. Particular measurement of lung volumes by FVC and in gas exchange by DLCO supports the diagnosis. Associations between clinically significant SSc ILD and male gender, age, DcSSc, topoisomerase antibodies, low FVC at baseline, widespread lung involvement on baseline HRCT, and higher decline rate of FVC and DLCO during followup were reported. A standardized approach to assessing and treating SSc and SSclILD in particular have been proposed. Main treatment regimens include cyclophosphamide and mycophenolate mofetil; recently antifibrotic drug nintedanib showed significant efficacy in hindering FVC decline rate in patients with SSc ILD. The data on survival changes in SSc generally and SSclILD are conflicting.

Objectives: To analyze demographic and clinical features and mortality of patients with SSc ILD.

Methods: A retrospective study on Rambam Health Care Campus prospective cohort of SSc patients fulfilled ACR and EULAR Classification Criteria 2013 for the period between January 2000 and September 2020 was performed. Patients were recruited at one of their early visits to the clinic. The majority of recruited patients were included into EUSTAR prospective cohort 042, since 2004 the Rheumatology Institute at Rambam is affiliated to EUSTAR registry project. Data on patients not registered in EUSTAR database but treated at our institution was extracted via hospital electronic records. Patients with lung involvement underwent baseline and annual HRCT and pulmonary function tests in addition to clinical assessment during their visit to combined rheumatology-pulmonology clinic. We registered age, gender, ethnicity, date of SSc diagnosis and ILD diagnosis, disease duration, SSc subset, pulmonary, cardiac, renal, and muscle involvement, treatment used, autoantibodies, FVC, DLCO, HRCT and pulmonary artery pressure. Statistical analysis included t-test, Pearson's Chi-squared test, Fisher's test, and Cox Regression analysis with p value less than 0.05 as significant.

Results: Among 446 SSc patients (female 82.3%, mean age 46.5 and disease duration 11.6 years, DcSSc 39.2%; 27.4% dead during follow-up) 141 patients had ILD. Comparison between patient with ILD and without ILD showed significant differences in term of nationality (Arabs 34% vs 18.7%), SSc related death 78.3% vs 50.7%), DcSSc (68.8% vs 25.6%), topoisomerase antibodies

Table 1. Patient characteristics according to the anti-ARS. ILD - interstitial lung disease; IQR- interquartile range; NSIP - Non-specific interstitial pneumonia; UIP - Usual interstitial pneumonia; yrs - years

Variables	Overall, n=70	Jo-1, n=42 (60%)	PL-12, n=11 (15.7%)	PL-7, n=10 (14.3%)	EJ, n=4 (5.7%)	OJ, n=2 (2.9%)
Mean age at onset, yrs	52 ± 15	46.6 ± 14.4	55.2 ± 14.7	56.5 ± 12.5	56.3 ± 11.2	73.5 ± 2.1
Female, n (%)	49 (70)	29 (69)	9 (81.8)	7 (70)	2 (50)	2 (100)
Median age in years at disease onset (IQR)	52 (15-75)	48 (15-70)	59 (20-70)	62 (39-73)	60 (40-65)	73.5 (72-75)
Median follow-up time in yrs (IQR)	3 (0-32)	5 (0-32)	3 (0-13)	1 (1-4)	4 (2-21)	1 (0-2)
Median diagnostic delay in yrs (IQR)	6 (1-33)	7 (1-33)	7 (2-19)	4 (1-23)	1.5 (1-2)	12.5 (2-21)
Myositis, n (%) and Comparison Anti-Jo.1 ARS vs PL-12 and PL-7	36 (51.4)	25 (59.5)	3 (27.3)	4 (40)	3 (75)	0
ILD, n (%) and Comparison Anti-Jo.1 ARS vs PL-12 and PL-7	53 (75.7)	33 (78.6)	^{*p < 0.01} 8 (72.7)	p=0.7 6 (60) p=0.56	- 4 (100)	- 1 (50)
ILD pattern - NSIP, n (%)	30 (56.6)	18 (54.5)	p = 0.98 6 (75)	- 3 (50)	- 1 (25)	- 0
ILD pattern - UIP, n (%)	6 (11.3)	3 (9.1)	1 (12.5)	1 (16.7)	1 (25)	0
ILD pattern - other specific pattern, n (%)	6 (11.3)	4 (12.1)	0	2 (33.3)	1 (25)	0
ILD pattern - non-specific pattern, n (%)	11 (15.7)	8 (24.2)	1 (12.5)	0	1 (25)	1 (100)
Mechanic's hands (%), n (%)	23 (32.9)	14 (33.3)	3 (27.3)	2 (20)	0	1 (50)
General impairment, n (%)	18 (25.7)	11 (26.2)	3 (27.3)	2 (20)	2 (50)	0
Fever, n (%)	7 (10)	4 (9.5)	2 (20.2)	0	1 (25)	0
Raynaud phenomenon, n (%)	22 (31.4)	11 (26.2)	7 (63.6)	0	2 (50)	0
Arthritis, n (%) and Comparison Anti-Jo.1 ARS vs PL-12 and PL-7	43 (61.4)	29 (69)	5 (45.4)	2 (20)	2 (50)-	1 (50)-
Malignancy, n (%)	4 (5.7)	3 (7.1)	p=0.07 1 (9.1)	^{*p < 0.01} 0	0	0
Deaths, n (%)	2 (2.9)	2 (2.4)	0	0	0	1 (50)