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Myositis and SSc: Clinical highlights 2019

OP0062

IDENTIFICATION OF SIX DERMATOMYOSITIS SUBGROUPS USING PRINCIPAL COMPONENT ANALYSIS-BASED CLUSTER ANALYSIS

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Background: Dermatomyositis (DM) is a heterogeneous disease with a wide range of clinical manifestations. Bohan and Peter suggested four subtypes of DM: idiopathic DM, juvenile DM, DM associated with cancer, and DM associated with other connective tissue diseases. Different DM subtypes have distinct clinical manifestations, responses to therapy and prognoses.

Objectives: The aim of the present study was to identify the clinical subtypes of DM by applying cluster analysis.

Methods: We retrospectively reviewed the medical records of 720 DM patients and selected 21 variables for analysis, including clinical characteristics, laboratory findings, and comorbidities. Principal component analysis (PCA) was first conducted to transform the 21 variables into independent principal components. Patient classification was then performed using cluster analysis based on the PCA-transformed data. The relationships among the clinical variables were also assessed.

Results: We transformed the 21 clinical variables into 9 independent principal components by PCA and identified 6 distinct subgroups. Cluster A was composed of two sub-clusters of patients with classical or moderate DM. Cluster-B patients were older and had malignancies. Cluster C was characterized by interstitial lung disease (ILD), skin ulcer, and minimal muscle involvement. Cluster D included patients with prominent lung, muscle, and skin involvement. Cluster E contained DM patients with other connective tissue diseases. Cluster F included all patients with myocarditis and prominent myositis and ILD. We found significant differences in treatment across the six clusters, with clusters C, D, and E being more likely to receive aggressive immunosuppressive therapy.

Conclusion: We applied cluster analysis to a large group of DM patients and identified six clinical subgroups, underscoring the need for better phenotypic characterization to help develop individualized treatments and improve prognosis.

REFERENCES:

- [1] Bohan, A. and J.B. Peter, Polymyositis and dermatomyositis (first of two parts). *N Engl J Med*, 1975. 292(7): p. 344-7.
- [2] Bohan, A. and J.B. Peter, Polymyositis and dermatomyositis (second of two parts). *N Engl J Med*, 1975. 292(8): p. 403-7.
- [3] Marie, I., Morbidity and mortality in adult polymyositis and dermatomyositis. *Curr Rheumatol Rep*, 2012. 14(3): p. 275-85.
- [4] Callen, J.P., Dermatomyositis. *The Lancet*, 2000. 355(9197): p. 53-57.

Fig. 1

Dermatomyositis Unsupervised combination of the Dermatomyositis Patients into Distinct Clusters

Fig. 2

Disclosure of Interests: None declared

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SAFETY OF MYCOPHENOLATE MOFETIL TREATMENT IN SYSTEMIC SCLEROSIS IN REAL LIFE: REPORT FROM A SINGLE CENTER LARGE COHORT OBSERVATIONAL STUDY

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Background: Mycophenolate mofetil (MMF) has been increasingly used in the treatment of early diffuse cutaneous Systemic Sclerosis (dcSSc) and SSc-associated interstitial lung disease (SSc-ILD), and a recent Randomized Controlled Trial confirmed its efficacy and safety in SSc-ILD. However, the safety of this drug in the long term use has not been assessed in a real life setting.

Objectives: We aimed to analyze the period prevalence and the type of adverse events (AEs) associated to MMF treatment in a single center large cohort.

Methods: Charts of all SSc patients meeting the 2013 ACR/EULAR classification criteria consecutively visited at our outpatient clinic from January 1st 2017 to December 31st 2017 were retrospectively analyzed. Demographics, clinical, serological, functional, imaging data, treatments, and AEs were recorded. Patients were subgrouped according to the immunosuppressant (IS) taken during the observation period (e.g. MMF, azathioprine- AZA, or cyclophosphamide- CYC, no IS). The period prevalence of AEs was calculated and correlations of between AEs and patient features were investigated by univariate and multivariate analyses.

Results: Two-hundred and thirty-seven patients were included (92.4% were females, aged 56.4±11.3 years, with a median disease duration of 17 years, range 1-60). Among them, 85 (35.9%) were taking MMF, 34 (14.3%) AZA or CYC, 118 (49.8%) had no current IS treatment. Prevalence of the dcSSc subset was higher in the MMF group (34.1% versus 17.6% in the AZA/CYC group and 5.9% in the no IS group; $p < 0.05$), while prevalence of ILD was similar in the MMF and in the AZA/CYC group and higher than the no IS group (89.4% and 82.3% versus 41.5%; $p < 0.05$ for both), as well as the prevalence of the anti-topoisomerase I antibody positivity (60.7% and 52.9% versus 26.3%; $p < 0.05$). Both patients treated with MMF and AZA/CYC had more frequently concomitant low-dose glucocorticoid (GC) therapy than patients without IS (76.5% for both groups versus 39%; $p < 0.05$). In regard of total AEs, their prevalence was higher in the MMF group (71.7% versus 67% in the AZA/CYC group and 49% in the no IS group; $p < 0.05$ MMF vs no IS). In particular, patients treated with MMF had a higher prevalence of total infectious AEs (55.7% versus 30.4% in the AZA/CYC group and 27.6% in the no IS group; $p < 0.05$), predominantly airway infections (41.2% of all infectious AEs). Given so, we investigated the correlations of the infectious AEs in the MMF group with ILD, smoking history, and concurrent GC. However, we didn't find any significant association with these variables. When we looked for correlations of infectious AEs in the MMF group with other disease features, we found that they were correlated with the duration of the disease (median= 4 years; $r = 0.25$; $p = 0.02$) and with the presence of digital ulcers and/or pitting scars ($r = 0.22$; $p = 0.03$). No AE required hospitalization and resolved after treatment suspension.