

Oral presentation

9.4 Autoantibodies in pediatric systemic lupus erythematosus: ethnic grouping, autoantibody clustering and clinical correlations

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Objective

The aims of this study were: 1) to evaluate the spectrum of serum autoantibodies (AA) in pediatric-onset systemic lupus erythematosus (pSLE) with a focus on ethnic differences, 2) to use cluster analysis to identify patients with similar AA patterns and to determine their clinical associations.

Methods

A single center cohort study of all newly diagnosed pSLE patients seen over an 8-year period was performed. Ethnicity, clinical and serological data were available in 156/169 patients (92%). The frequencies of 10 selected AA among ethnic groups were compared. Cluster analysis was used to identify groups of patients with similar AA profiles. Associations of these groups with clinical and laboratory features of pSLE were examined.

Results

Among our 5 ethnic groups, there were differences in the prevalence of anti-U1RNP and anti-Sm antibodies which occurred more frequently in non-Caucasian patients ($p < 0.0001$, $p < 0.01$, resp.). Cluster analysis revealed 3 AA clusters. Cluster 1 consisted of anti-dsDNA antibodies. Cluster 2 consisted of anti-dsDNA, anti-chromatin, anti-ribosomal P, anti-U1RNP, anti-Sm, anti-Ro and anti-La AA. Cluster 3 consisted of anti-dsDNA, anti-RNP and anti-Sm AA. The highest proportion of Caucasians was in cluster 1 ($p < 0.05$) which was characterized by a mild disease

with infrequent major organ involvement compared to cluster 2 which had the highest frequency of nephritis, renal failure, serositis and hemolytic anemia, or cluster 3 which was characterized by frequent CNS disease and nephritis.

Conclusion

This study demonstrated ethnic differences in AA profiles in pSLE. AA tended to cluster together and the clusters predicted subsequent clinical course.