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Autoantibody Clustering in Systemic Lupus Erythematosus–Associated Pulmonary Arterial Hypertension

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Introduction: Systemic lupus erythematous–associated pulmonary arterial hypertension (SLE-PAH) is one of the important causes of mortality in lupus patients. Different autoantibodies are associated with SLE-PAH which can predict its future development and management

Objective: The objective of the study was to identify distinct autoantibody-based clusters in SLE-PAH patients and to compare demographic characters, clinical phenotypes, and therapeutic strategy across the clusters.

Methods: Three distinct autoantibody clusters were identified using k-means cluster analysis in 71 SLE-PAH patients. After clustering, associations between final clusters and patient characteristics were assessed by one-way analysis of variance (ANOVA) with post hoc analysis for continuous variables and Fisher's exact Hamilton test for categorical variables.

Result: Cluster1 had predominant Sm-RNP, Smith, SS-A association; cluster 2 had no definite autoantibody association; and cluster 3 was associated with nucleosome, histone, dsDNA, and ribosomal P protein. Patients in cluster 3 had a highly active disease while those in cluster 1 had significant cytopenia. Mean age and mean right ventricular systolic pressure (RVSP) were both high in cluster 2, indicating later-onset PAH in this group. (Abstract Image)

Conclusion: This was the first autoantibody-based cluster analysis study in SLE-PAH patients in India which confirmed that autoantibodies did exist as clusters and the presence of definite autoantibodies can predict future development of pulmonary hypertension in these patients.

Biography

Dr Ritasman Baisya completed his MD Medicine course in 2018 and DM Rheumatology course in 2021 . As a young researcher ,he had special interest in advanced research on cardiovascular morbidity and mortality in autoimmune diseases including SLE .Cluster analysis , a new machine learning algorithm is used in the present study and ANA immunoblot was done for all patients .

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