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Anti-NOR-90 autoantibodies and clinical associations in systemic sclerosis: an international retrospective cohort study

Autoantibodies against NOR-90 are rare and have been associated with systemic sclerosis (SSc). This study seeks to identify the characteristics of SSc participants with anti-NOR-90 autoantibodies.

An international (Canada, Australia, USA, Mexico) cohort of 2143 SSc participants was included. Sera were tested using a line immunoassay (Euroimmun, Lübeck, Germany). Clinical associations with anti-NOR-90 autoantibodies were investigated. Single-specificity anti-NOR-90-positive was defined as anti-NOR-90-positivity without other SSc-related autoantibodies, except for anti-Ro52/TRIM21.

115 (5%) participants were anti-NOR-90-positive, of whom the majority overlapped with other autoantibodies. Anti-NOR-90 positivity overall was associated with a higher frequency of calcinosis (35% vs 24%, OR 1.70, 95% CI: 1.13, 2.52), digital ulcers (62% vs 49%, OR 1.70, 95% CI: 1.12, 2.61) and arthritis (37% vs 29%, OR 1.61, 95% CI: 1.06, 2.40). Single-specificity anti-NOR-90-positive participants (n=21) had numerically lower mRSS (4.0 vs 7.0), a higher frequency of pulmonary hypertension (37% vs 14%, OR 3.58, 95% CI: 1.32, 9.00), lower mean % predicted forced vital capacity (FVC, 82.0% vs 91.3%) and diffusing capacity (DLCO, 58.9% vs 69.0%,) and higher frequency of interstitial lung disease (52% vs 34%, OR 2.11, 95% CI: 0.89-5.09). Anti-NOR-90 autoantibodies were not associated with increased cancer (10% vs 8%) or mortality (adjusted HR 1.27, 95% CI: 0.86, 1.88). Results from sensitivity analyses excluding anti-Ro52/TRIM21 from single-specificity definition were consistent in direction and magnitude.

In this large multicentre cohort, anti-NOR-90 autoantibodies commonly overlapped with other SSc-autoantibodies. Single-specificity anti-NOR-90 positivity was associated with more frequent pulmonary abnormalities and a tendency for lower mRSS