

January 01/10: Clinical usefulness of anti-RNA polymerase III antibody measurement by ELISA

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Clinical usefulness of anti-RNA polymerase III antibody measurement by enzyme-linked immunosorbent assay

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Introduction: Autoantibodies to RNA polymerase III (RNAP III) are specific for SSc and are associated with diffuse cutaneous and renal crisis. Its prevalence in SSc patients is lower than that of antibodies against topoisomerase I (anti-Scl-70) and centromere protein B (CENP B) but may occur also in SSc patients where these antibodies are negative. Clinically, the detection of anti-RNAP III is important because of its ability to help identify patients with a high risk of developing renal crisis and early detection and treatment can significantly improve the result of this occurrence.

Materials and Methods: The study involved 354 patients with SSc, 254 with non-SSc CTDs and 102 healthy controls. ELISAs were used to detect antibodies against RNAP III, Scl-70 and CENP B. The presence of anti-RNAP III antibody in selected serum samples was confirmed by immunoprecipitation (IP) assay.

Results:

SSc-Markers	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Anti-RNAP III	10.7	98.8	92.7	43.4
Anti-Scl-70	31.0	93.5	87.2	48.5
Anti-CENP B	32.2	97.1	94.2	49.8
Anti-Scl-70 or Anti-CENP B	59.9	89.8	90.7	59.8
Anti-Scl-70, Anti-CENP B or Anti-RNAP III	68.2	89.3	90.9	63.9

Conclusion: The measurement of anti-RNAP III antibody by ELISA is useful in routine clinical practice because it helps diagnose SSc and identify a disease subset with severe skin and renal involvement.

