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ANA-INDIRECT IMMUNOFLUORESCENCE: A VALID DIAGNOSTIC TOOL OR A VAIN IMMUNOLOGICAL EXERCISE?

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ABSTRACT Antinuclear antibody (ANA) testing is the most common test performed for the diagnosis of autoimmune diseases.

Aim of the study: To detect antinuclear antibody positivity, the various patterns and its relationship in different AID clinical conditions.

Materials and methods: A five year retrospective analysis of all indirect Immunofluorescence antinuclear antibody test (ANA-IIF), performed between January 2010 and December 2014 was done.

Results: Out of the 593 serum samples from suspected AID patients, 77(12.98%) were found to be positive for antinuclear antibodies by IIF. Among the patients positive for ANA by Immunofluorescence, most common clinical conditions were Systemic lupus erythematosus (SLE) (32%), Rheumatoid arthritis (8%) and Scleroderma (4%). The most common patterns among them were speckled (52.87%) followed by homogenous (40.31 %), Centromere (3.66 %), and nucleolar pattern (3.14 %).

Conclusion: The detection of ANA by IIF provides an excellent support for the clinical diagnosis and to identify subsets of patterns that are present in a particular autoimmune disease.

KEYWORDS : Anti-nuclear antibody, Immunofluorescence, Autoimmune disease

Introduction:

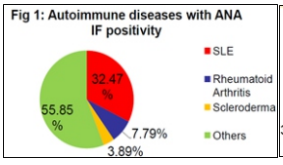
Antinuclear antibody (ANA) testing is the most common test performed for the diagnosis of autoimmune diseases which affects 5% to 7% of the population. However, in the developing countries, there is paucity of data due to lack of diagnostic facilities. The objective of this study was to detect antinuclear antibody positivity, the various patterns and its relationship in different clinical conditions.

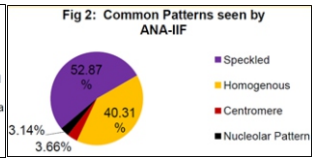
Methods:

A five year retrospective analysis of all indirect Immunofluorescence antinuclear antibody test (ANA-IIF), performed between January 2010 and December 2014 was done. The samples received from clinically suspected AID patients were processed in dilution of 1:100 using IIFT Mosaic Hep-20-10/liver biochip (primate) (EURO IMMUN).The slides were prepared according to the standard instructions provided by the manufacturer and readings were taken using a fluorescent microscope (Leica) by comparing with the positive and negative control. The different patterns seen in patients with positive test result were analysed and correlated with their clinical findings.

Results and Discussion:

Out of the 593 serum samples from suspected AID patients, 77(12.98%) were found to be positive for antinuclear antibodies by IIF. Among the patients positive for ANA by immunofluroscence, most common clinical conditions were Systemic lupus erythematosus (SLE) (32%), Rheumatoid arthritis(8%) and Scleroderma(4%) as seen in figure 1. The most common patterns among them were speckled (52.87%) followed by homogenous (40.31 %), Centromere (3.66 %), and nucleolar pattern (3.14 %) as seen in figure 2. Among the samples positive for ANA by IF, 62.33% (48) were tested for ANA by ELISA and 47.91% (23) were found to be positive. The predominant patterns seen in SLE cases were homogeneous (60%) followed by speckled (24%) and centromere (12%).





Type of AID	Speckled (%)	Homogenous (%)	Centromere (%)	Mitochondrial (%)
SLE	24	60	12	4
Rheumatoid Arthritis	83.3	16.7	-	-
Scleroderma	100	-	-	-

Table 1: ANA-IIF Patterns seen in different types of AID

The predominant symptoms seen in patients with SLE were fever, facial puffiness and skin lesions. Among these patients, 72 % (23) were positive were for ds-DNA by ELISA. In Rheumatoid arthritis cases, the predominant pattern seen was speckled (83.3%) followed by homogeneous(16.7%). All of these cases were found to be positive for RA factor. The common symptoms observed in patients with Rheumatoid arthritis were multiple small joint pains and fever. However, in scleroderma, the only pattern that was observed was speckled (100%). Thus the detection of ANA by IIF provides an excellent support for the clinical diagnosis and to identify subsets of patterns that are present in a particular autoimmune disease.

Conclusion:

ANA (IIF) pattern types and the distribution of the patterns according to the diseases and symptoms helps in the diagnosis of autoimmune diseases. Detection of anti-nuclear antibodies by IIF with different fluorescence pattern can be used for screening patients clinically suspected for auto immune diseases which in turn aid them to appropriately treat specific AID.

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