

A Two-Year Follow-Up Study on the Detection of Antinuclear Antibodies (ANA) in Healthcare Workers after mRNA-Based Anti-SARSCOV-2 Vaccines

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ABSTRACT

Background and Aim: Now a days, the BNT162b2 and mRNA-1273 vaccines effects and their potential to induce autoimmune reactions are still not well understood. This two-year follow-up study aimed to assess the persistence of antinuclear antibodies (ANA) in healthcare workers (HCWs) who received these vaccines.

Methods: A total of 155 HCWs were initially enrolled in the study. However, only 77 participants (60 females and 17 males, age range 26-67 years, median age 48) completed all scheduled blood draws and received a minimum of 3 doses of either the BNT162b2 mRNA or mRNA-1273 vaccines. Blood samples were collected at multiple time points: before vaccine administration (T0), at 3 months (T1), 12 months (T2), and 24 months (T3) after the first dose. ANA levels were assessed using indirect immunofluorescence on Hep-2 cells, with dilutions of 1:80, 1:160, 1:320, and 1:640.

Results: Out of the initial population, 52 subjects who tested negative for ANA at T0 were included in the final analysis. Among them, 35 participants completed sample collection until the last follow-up (T3). After excluding subjects who contracted COVID-19 between T2 and T3, the final population for analysis comprised 17 subjects. Two individuals, positive at T1, maintained their positivity until T3. At T2, 6 subjects became ANA positive, resulting in a total of 8 ANA-positive subjects. At T3 the total number of positive subjects became 7. Our study population were surveyed to determine if they had undergone specialized rheumatology examinations.

Conclusion: Our research observed the onset of ANA in a subset of individuals who were initially ANA negative. These findings provide preliminary insights into the potential immune responses associated with mRNA vaccines. Indeed, the follow-up showed that two participants displayed clinical manifestation of arthralgia. Further investigations would be necessary to understand the clinical implications of ANA development in vaccinated individuals.

Keywords: Covid-19, Post-vaccination, ANA, Follow-up study

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