Correspondence

Medical conditions associated with a positive anti-double-stranded deoxyribonucleic acid

To the Editor

I read the interesting study by Attar and Koshak[1] on the medical conditions associated with a positive anti-double-stranded deoxyribonucleic acid (anti-dsDNA). There are many serological tests to detect anti-dsDNA antibodies namely, radioimmunoassay (RIA), crithidia luciliae immunofluorescence test (CLIFT), and enzyme-linked immunosorbent assay (ELISA). Each method detects a part of the spectrum of anti-dsDNA antibodies produced by a patient. Of all anti-dsDNA antibody detection methods, the CLIFT is thought to have the highest specificity for systemic lupus erythematosus (SLE). However, the clinical application is hampered by its low diagnostic sensitivity. In a recent German study,[2] a CLIFT with modified assay buffer (mCLIFT) was developed and compared with conventional CLIFT using sera from 110 patients with SLE, 89 anti-dsDNA ELISA-positive patients with other diseases (non-SLE group A), 157 non-SLE patients with undetectable anti-dsDNA antibodies by ELISA (non-SLE group B), 77 disease controls (non-SLE group C), and 50 healthy blood donors. Out of the 110 anti-dsDNA antibody ELISA-positive SLE patients, 84 (76.4%) demonstrated a positive kinetoplast staining using the mCLIFT, compared to only 42.3% using the conventional CLIFT. The diagnostic specificity of mCLIFT was 100% with healthy blood donors, and 98.1% with the non-SLE group C (anti-nuclear antibodies negative; no signs, or symptoms of an autoimmune disease). In the non-SLE groups A and B with various other autoimmune diseases or symptoms of a possible autoimmune disease, positive mCLIFT results were obtained in 33.7% and 3.2%. The study concluded that by modification of the assay buffer, a significant increase in sensitivity of the CLIFT could be observed while retaining the high specificity for SLE. Attar and Koshak[1] addressed in their paper that anti-dsDNA test was performed using ELISA technique. Therefore, their data needs to be interpreted with caution as the frequency distribution of positive anti-dsDNA antibodies in SLE and non-SLE groups might be changed on adopting that new technique. That caution is further stressed by noticing a marked discrepancy between 58.8% prevalence of positive anti-dsDNA antibodies in SLE patients addressed by Attar and Koshak[1] and 80.1% recently reported by Al Arfaj and Khalil.[3] Despite that concern, it remains a fact additionally supported by Attar and Koshak's study[1] that anti-dsDNA antibodies are not solely confined to SLE as other medical conditions do share the presence of anti-dsDNA antibodies with SLE. Clinicians, therefore, must cautiously interpret the result of positive anti-dsDNA antibodies pending the clinical presentations of patients.

Mahmood D. Al-Mendalawi
Department of Pediatrics
Al-Kindy College of Medicine, Baghdad University
Baghdad, Iraq

Reply from the Author

We would like to thank Prof. Al-Mendalawi for his comments on our article entitled "Medical conditions associated with a positive anti-double-stranded deoxyribonucleic acid".[1] Prof. Al-Mendalawi has suggested that the results are hampered by the low diagnostic sensitivity and that the mCLIFT is more specific for SLE diagnosis, which is absolutely right. Our institution is considered as a tertiary center that serves a large number of patients with multiethnic backgrounds, and anti-dsDNA is screened through ELISA, which is in agreement with American Guidelines, however positive samples have to be confirmed via CLIFT.[4,5] We agree that those found ELISA negative need to be tested by a more specific test. Interestingly, more tests have been created over the years, as you suggested mCLIFT and other tests such as anti-mDNA, and anti-nucleosome.[6]

Suzan M. Attar
Department of Internal Medicine
King Abdulaziz University
Jeddah, Kingdom of Saudi Arabia

References

1. Attar SM, Koshak EA. Medical conditions associated with a positive anti-double-stranded deoxyribonucleic acid. ***Saudi Med J*** 2010; 31: 781-787.
2. Conrad K, Ittenson A, Reinhold D, Fischer R, Roggenbuck D, Büttner T, et al. High sensitive detection of double-stranded DNA autoantibodies by a modified *Crithidia luciliae* immunofluorescence test. ***Ann N Y Acad Sci*** 2009; 1173: 180-185.
3. Al Arfaj AS, Khalil N. Clinical and immunological manifestations in 624 SLE patients in Saudi Arabia. ***Lupus*** 2009; 18: 465-473.
4. Kavanaugh AF, Solomon DH. Guidelines for immunologic laboratory testing in the rheumatic diseases: anti-DNA antibody tests. ***Arthritis Rheum*** 2002; 47: 546-555.
5. Tozzoli R, Bizzaro N, Tonutti E, Villalta D, Bassetti D, Manoni F, et al. Guidelines for the laboratory use of autoantibody tests in the diagnosis and monitoring of autoimmune rheumatic diseases. ***Am J Clin Pathol*** 2002; 117: 316-324.
6. Suleiman S, Kamaliah D, Nadeem A, Naing NN, Che Maraina CH. Anti-nucleosome antibodies as a disease activity marker in patients with systemic lupus erythematosus. ***Int J Rheum Dis*** 2009; 12: 100-106.