ANALYSIS OF HOMOGENEOUS PATTERN IN ANTI-NUCLEAR ANTIBODY-INDIRECT IMMUNOFLUORESCENCE ASSAY

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Background: Autoantibodies that produce the homogenous pattern on anti-nuclear antibody-indirect immunofluorescence (ANA-IFA) assay using human epithelial cell line (HEp-2) substrate are histones, dsDNA and nucleosome. Homogenous pattern may be seen in patients with many different systemic autoimmune diseases as well as organ-specific autoimmune diseases. Homogenous pattern is difficult to distinguish from dense fine speckled (DFS) pattern and other staining pattern may be made by homogenous pattern.

Objectives: The purpose of this study was to analyze the profile of autoantibodies in patients with homogenous pattern on IIF-ANA assay and to find out the clinical significance of homogenous pattern.

Methods: A total of 103 sera samples with homogenous pattern on IIF-ANA assay were obtained. The IIF-ANA assay was performed using the Phadia system (Bio-Rad Laboratories, Hercules, CA, USA) with Kallestad HEp-2 slides (Bio-Rad Laboratories). ELISA CTD Screen and ELISA dsDNA (Thermo Fisher Scientific, Waltham, MA, USA) were performed using the Phadia 100 system (Thermo Fisher Scientific, Germany). ELISA CTD Screen has following specific antigens: U1RNP (RN70, A, C), SS-A/ Ro (60kDa, 52kDa), SS-B/ La, Centromere B, Scl-70, Jo-1, fibrillarin, RNA Pol III, ribosomal P-protein, PM-Scl, PCNA, Mi-2, Sm, and native purified DNA. Specific autoantibody tests against histone and nucleosome assay were performed using Euroimmun microparticle ELISA (Euroimmun AG, Luebeck, Germany). Western blot (WB) assay was performed to confirm the presence of anti-DFS70 using HeLa whole-cell lysates as previously described. Clinical information regarding the presence of autoimmune diseases and other clinical conditions of individual patients was obtained from a retrospective review of clinical records.

Results: Of the 103 patients with homogenous pattern on IIF-ANA assay, 21 were diagnosed as systemic autoimmune rheumatic disease (SARD) or organ-specific autoimmune diseases (autoimmune group), whereas 82 were not patients with autoimmune diseases (non-autoimmune group). Among 103 patients, 51 patients (49.5%) were negative on all autoantibody tests performed in this study; CTD screening assay and specific autoantibody tests against anti-DFS70, dsDNA, histone and nucleosome were performed using Euroimmun microparticle ELISA (Euroimmun AG, Luebeck, Germany). Western blot (WB) assay was performed to confirm the presence of anti-DFS70 using HeLa whole-cell lysates as previously described. Clinical information regarding the presence of autoimmune diseases and other clinical conditions of individual patients was obtained from a retrospective review of clinical records.

Conclusion: It is generally accepted that homogenous pattern is caused by antibodies against dsDNA, histone and nucleosome and have a clinical relevance with SLE, chronic autoimmune hepatitis, and juvenile idiopathic arthritis. However, the results of this study found that the majority (79.6%) of patients with homogenous pattern had no autoimmune diseases and only 31% had autoantibodies to dsDNA, histone and nucleosome. Especially 49.5% of patients were all negative for autoantibodies included in CTD screening assay as well as autoantibodies responsible for homogenous pattern such as autoantibodies against dsDNA, histone and nucleosome. This suggests that homogenous pattern may be originated by autoantibodies that cannot be identified by conventional test methods.

Disclosure of Interests: None declared

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QUANTUM BLUE® RAPID TDM ASSAY STANDARDIZATION HIGHLY CORRELATES WITH WHO INTERNATIONAL STANDARD FOR INFILXIMAB

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Background: Therapeutic drug monitoring of patients under anti-TNF therapy is based on trough level determination of the drug. Rapid assays and multiple ELISAs are available that measure anti-TNF biologics. An international standard is required to improve comparability among different assays. Recently, WHO introduced a series of anti-TNF standards for etanercept, adalimumab and infliximab. This is the first step for achieving common standardisation of assays available world wide.

Objectives: The aim of the study was to evaluate the correlation of the WHO standard with BÜHLMANN Quantum Blue® Infliximab standardization and to compare spiking recovery in three commercially available infliximab ELISAs and one infliximab rapid test.

Methods: Calibration curves were generated with BÜHLMANN calibrators and with calibrators made from WHO international standard for infliximab (NIHSC 16/170). Twenty-six serum samples, covering a concentration range from 0.5 μg/mL to 19 μg/mL, were analyzed with both calibration curves and compared by Bland-Altman and Passing-Bablok analysis. Furthermore, recovery of six serum samples spiked with WHO international standard for infliximab was determined in three assays. ASSAY TRACKER® Infliximab (a), Griifols/Progenika Promonitor FX (b), Immundiagnostik IDKmonitor Infliximab drug level (c) and BÜHLMANN Quantum Blue® Infliximab (d). Spiking recovery experiments were performed according to Westgard 2008.

Disclosure of Interests: None declared

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THE TIME-TO-EVENT ANALYSIS OF THE APPLICATION OF ULTRASOUND TO DISTINGUISHING PMR

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Background: Japan is the world's most aged country. The number of patients with polymyalgia rheumatica (PMR) is expected to increase more. Classification criteria including ultrasound findings were published in 2012 (1), but the ability to differentiate PMR from other mimicking diseases was unknown. It is difficult to diagnose PMR accurately. We will clarify whether recently reported ultrasound findings (2, 3) which could be characteristic in PMR are helpful for distinguishing from other mimicking diseases and treatment outcome in suspected PMR patients. Neither diagnostic laboratory test nor specific antibody exist, and inflammatory markers such as C reactive protein and erythrocyte sedimentation rate are not specific.

Objectives: Patients who were clinically suspected of PMR and underwent ultrasound examination from 2008 to 2018. And Patients who visited the hospital with PMR and were diagnosed with PMR from 2008 to 2018.

Methods: Patients who visited the hospital and were diagnosed with PMR were extracted from the medical record database of the hospital. Patients who had been administrated GC at the first visit and whose records were not confirmed were excluded. Patients who were clinically diagnosed with PMR without ultrasound(Cli-PMR), patients who were diagnosed with PMR with ultrasound reports(US-Cli-PMR), patients who were diagnosed by the ultrasound expert based on ultrasound images(US-PMR).

Results: PMR patients were extracted. 403 of 545 was excluded because of preexisting GC therapy and record availability. At the 6 months follow-up, 92.8% of the non-US PMR group and 97% of US-PMR group remain PMR and at the 12 months follow up 88.8% and 95% respectively. There was no significant difference in the three time-to-event outcomes.

Conclusion: Ultrasound did not contribute the improvement of the PMR outcomes, and findings were not significantly different from previously reported. Further studies are needed to confirm the findings.

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