CIRCULATING PROLACTIN LEVEL IN SYSTEMIC LUPUS ERYTHEMATOSUS AND ITS CORRELATION WITH DISEASE ACTIVITY: A META-ANALYSIS

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Background and aims Prolactin has an immune stimulatory effect and may promote autoimmunity by encouraging the development of antigen presenting cells expressing MHC class II and co-stimulatory molecules and modulating IFN-γ secretion. This study aimed to evaluate the relationship between circulating prolactin level and systemic lupus erythematosus (SLE), and to establish a correlation between plasma/serum prolactin levels and SLE activity.

Methods We performed a meta-analysis comparing the plasma/serum prolactin levels in patients with SLE to controls, and examined correlation coefficients between circulating prolactin level and SLE disease activity.

Results Twenty-five studies with a total of 1056 SLE patients and 426 controls were included. Prolactin levels were significantly higher overall in the SLE group than in the control group (SMD=0.987, 95% CI=0.512–1.463, p=4.7x10^{-5}). Stratification by ethnicity showed significantly elevated prolactin levels in the SLE group in Asian, Latin American, and mixed populations (SMD=0.813, 95% CI=0.137–1.490, p=0.018; SMD=0.981, 95% CI=0.307–1.655, p=0.004; SMD=1.469, 95% CI=0.443–2.495, p=0.005, respectively), but not in the European population. Meta-analysis of correlation coefficients showed a significantly positive correlation between circulating prolactin level and SLE activity (Correlation coefficient=0.379, 95% CI=0.26–0.487, p=4.0x10^{-5}).

Conclusions Our meta-analysis demonstrated that circulating prolactin levels are higher in patients with SLE and that a significantly positive correlation exists between prolactin levels and SLE activity.

APPLICATIONS OF PROTEIN MICROARRAY FOR SALIVA DIAGNOSTICS IN AUTOIMMUNE DISEASES

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Background and aims Many reports suggest that saliva could be a source of biomarkers capable of detecting certain diseases. However, very few studies conducted to profile autoantibody isotypes in the saliva of autoimmune diseases. This study was performed to establish protein microarray for saliva diagnostics and to identify distinct profiles of salivary autoantibody in patients with systemic lupus erythematosus (SLE).

Methods We constructed antigen microarrays with canonical antigens of SLE as well as cytokines to characterise autoantibodies in matched saliva and serum derived from 17 SLE patients and 13 healthy controls. The autoantibody IgG and IgA isotypes were assayed. The Axon Scanner and GenePix Pro 7.0 were used to determine median fluorescence intensities (MFI) of features and background. Data were analysed using MultiExperiment Viewer and Significance Analysis of Microarray (SAM) algorithm.

Results The dynamic range of detection on the array was 1–10^4 ng/mL for commercial Ab spiked into saliva. We observed a high degree of specificity for its target antigen. IgG Ab reactivity against specific antigens was found mainly in serum, while IgA Ab reactivity to given antigens was predominant in saliva. SAM identified 7 antigens including BAFF, Ro60, U1-A and Sm/RNP that were significantly more reactive to IgA Ab in the saliva of SLE patients than in healthy controls (false discovery rate <0.01). The hierarchical clustered heat-map successfully placed SLE patients into close subgroups.

Conclusions Protein microarrays facilitate detection of autoantibody in human saliva as well as serum. Saliva profiling revealed that elevated IgA autoantibody reactivity to several targets including BAFF was associated with SLE compared with controls.