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### WORLDWIDE PICTURE OF RENAL INVOLVEMENT IN SYSTEMIC LUPUS ERYTHEMATOSUS USING A BIG DATA ANALYTICAL APPROACH

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**Background and aims** Lupus nephritis is the most severe involvements of internal organs that may develop patients with systemic lupus erythematosus (SLE). Studying the worldwide distribution of this feature across geographic regions and ethnic groups using a big data-driven approach may help obtain a more high-definition resolution of lupus nephritis

**Methods** We made a text-word search in Google between 8th and 15th May 2015 using SLE and 100...100000000 patients. We selected the cohorts in which the frequency of renal involvement was detailed, and we analysed the influence on this frequency of the characteristics of the cohorts.

**Results** Of the 63 263 patients included, renal involvement was reported in 24 790 patients(38%).The rate of renal involvement was influenced by the predominant ethnicity:it was lower in cohorts in white patients in comparison with a multiethnic origin( $p=0.008$ ).The mean age at SLE diagnosis was higher in cohorts in which the mean age was <40 years ( $p=0.019$ ).The rate of renal involvement was higher in cohorts with a frequency of positive antiDNA antibodies higher than 75%( $p=0.031$ ),cohorts with a frequency of positive antiSm antibodies higher than 25%( $p=0.046$ ), cohorts with a frequency of positive antiRNP antibodies higher than 25%( $p=0.031$ ) and cohorts with a frequency of positive anti-La/SSB antibodies higher than 15%( $p=0.025$ ).

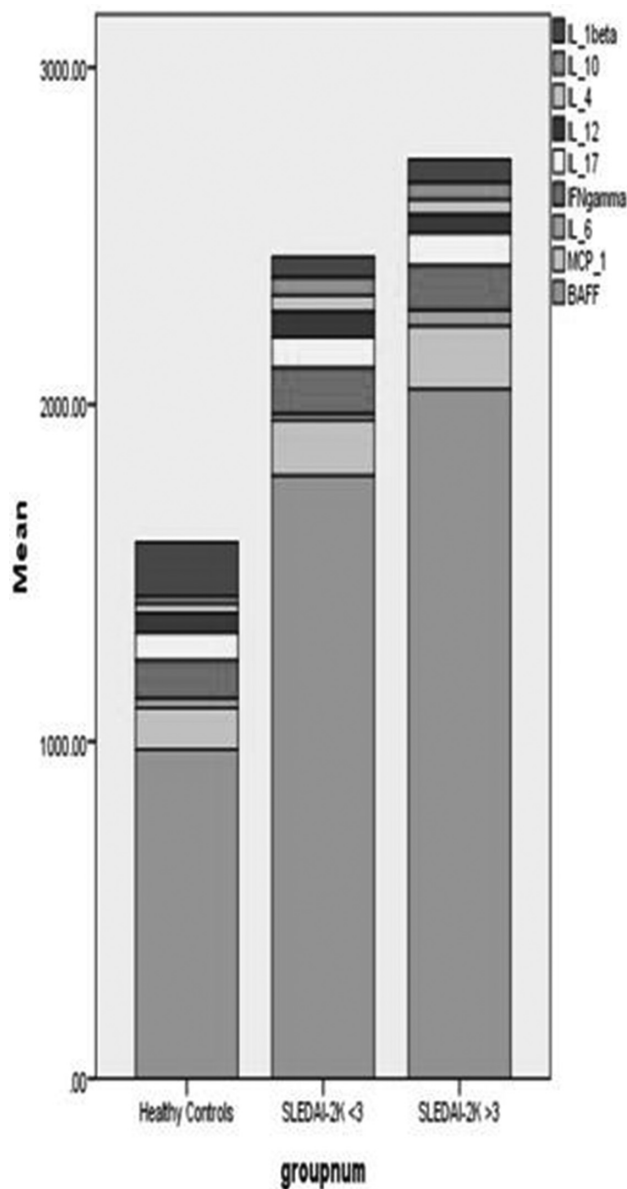
**Conclusions** This big data analytical approach confirm that the rate of renal involvement is influenced by ethnicity, the mean age at SLE diagnosis and the frequency of positive autoantibodies.The higher rates of renal involvement being found in US and Asian studies,with the youngest patients at the time of SLE diagnosis and highest rates of immunopositive patients.

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### PRINCIPAL COMPONENT ANALYSIS AS A METHOD TO UNRAVEL THE RELATION BETWEEN DISEASE ACTIVITY AND CYTOKINE PROFILING IN SYSTEMIC LUPUS ERYTHEMATOSUS

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**Abstract 418 Figure 1** Mean serum levels (pg/mL) of cytokines in healthy controls and SLE patients.

**Background** Cytokine dysregulation contributes to immune dysfunction, inflammation and organ damage in Systemic Lupus Erythematosus (SLE). Cytokines have multifarious interactions on other cytokines and immune cells. Thus cytokines studies should reflect this intrinsic complexity.

**Aim** Utilise Principle Component Analysis (PCA) to unravel the interplay of a selection of cytokines for SLE versus healthy controls.

**Methods** A cross-sectional study of 102 SLE patients and 30 controls. Sera samples of IFN- $\gamma$ , IL-1 $\beta$ , IL-4, IL-6, IL-10, IL-12, IL17, BAFF and MCP-1, were analysed by ELISA and compared non-parametrically between groups. SLE disease activity was assessed by SLEDAI-2K. PCA demonstrated the cytokine profiles of healthy controls, SLE patients with low (SLEDAI-2K<3) and moderate to high disease activity (SLEDAI-2K $\geq$ 3).

**Results** BAFF correlated with disease activity (Rs. 0.483,  $p<0.001$ ) and highest in SLEDAI-2K $\geq$ 3 ( $p<0.001$ ). BAFF was