excluded from this study. All patients underwent Tc-99m ECD SPECT and were classified by the number of positive antiphospholipid antibodies they carried. The heterogeneity of brain perfusion was defined as the coefficient of variation. Analysis of variance (ANOVA) was used to evaluate the differences between groups.

**Results** Total 60 adult patients were included in this study. There were 54 patients in the case group and 6 patients in the control group. The mean age was 38.3±11.5 years. There were 52 women and 8 men. There was no significant difference in mean brain perfusion between groups (p=0.69). However, Tc-99m ECD SPECT demonstrated significant heterogeneity of brain perfusion in relation to the number of antiphospholipid antibodies (p=0.01).

**Conclusions** This is the first study to show that Tc-99m ECD SPECT can detect the increased heterogeneity of brain circulation in non-criteria antiphospholipid antibody carriers with neuropsychiatric manifestations.

### Parallel Session 2: Cell targeting in SLE

**16** HIGH SALT PROMOTES SYSTEMIC LUPUS ERYTHEMATOSUS BY TET2-INDUCED DNA DEMETHYLATION AND DRIVING THE DIFFERENTIATION OF TFH CELLS

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**Background and Aims** Systemic lupus erythematosus (SLE) is an autoimmune disorder that is characterised by the presence of autoantibodies and immune dysregulation. The pathogenesis of SLE has not been elucidated. The induction of epigenetic changes by environmental factors such as diet may also be relevant. A high-salt diet is considered an important contributor to cardiovascular and renal diseases, and recent research has indicated that a high-salt diet can induce autoimmunity.

**Methods** In this study, the effects of high salt on various immune cells and in MLR/lpr mice were observed, and the underlying mechanisms were investigated by flow cytometry, high-throughput sequencing, DNA methylation map, ChIP-qPCR.

**Results** In this study, high salt (sodium chloride, NaCl), under physiological conditions, was demonstrated to increase the differentiation of Tfh. A high-salt diet markedly increased lupus features in MRL/lpr mice. The mechanism is NaCl-induced DNA demethylation via the recruitment of the hydroxymethyltransferase Ten-Eleven Translocation 2 (TET2). Gene silencing of TET2 obviously diminished NaCl-induced Tfh cell polarisation in vitro. In addition, the gene expression of sh2d1a, map3k1, spn and stat5b was enhanced after NaCl treatment, consistent with the findings in lupus CD4+ T cells. However, only spn was directly regulated by TET2, and spn was not the sole target for NaCl.

**Conclusions** High-salt treatment promotes SLE in mice and the underlying mechanism might be NaCl enhancing Tfh cell differentiation by TET2 inducing global and gene specific DNA demethylation. Our findings not only explain the epigenetic mechanisms of high-salt induced autoimmunity but also provide an attractive molecular target for intervention strategies of SLE.

### Parallel Session 4: Lupus reflections across the continents: are we addressing the needs of our patients?

**17** CAPABILITIES OF EUROPEAN LUPUS GROUPS: MEMBERS OF LUPUS EUROPE

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**Background** Lupus patient organizations (POs) are becoming increasingly important stakeholders in political and medical healthcare decision-making processes. LUPUS EUROPE is an umbrella organization of national lupus groups in Europe.

**Objectives** To identify the different structures and capabilities among European lupus groups.