

**P034** Anti-C1q autoantibodies in lupus patients target oxidatively-modified C1q

**B.Ryan<sup>a</sup>, P.Eggleton<sup>a</sup>, N.Viner<sup>a</sup>, R.Haigh<sup>a</sup>, M.Haas<sup>a</sup>,  
A.Nissim<sup>b</sup>, D.Isenberg<sup>c</sup> and P.G.Winyard<sup>a</sup>**

*<sup>a</sup>Peninsula Medical School, Exeter; <sup>b</sup>Barts and the London Medical School, London; <sup>c</sup>University College London.*

### Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease affecting multiple organs in the body. Key in SLE aetiology are autoantibodies against host proteins and impaired clearance of apoptotic cells. Furthermore, oxidative stress due to decreased antioxidant capacity and increased radical generation results in inflammation and tissue damage. Autoantibodies to C1q, a protein involved in apoptotic cell clearance, have previously been reported in around 40 % of SLE patients. Oxidative modifications to C1q may result in neopeptide formation and targeting of the protein by autoantibodies.

### Methods

Modifications to C1q were carried out by incubation with oxidants and visualised by SDS-PAGE. Binding of autoantibodies in SLE and normal sera to unmodified or oxidatively modified C1q was assessed by anti-C1q ELISA and western blot.

### Results & Conclusions

Oxidative modifications to C1q resulted in a dose-dependent shift in the molecular weight of the C1q C-chain. 17/54 SLE patients showed autoantibody binding to unmodified C1q. Significantly more patients (26/54) had autoantibodies to H<sub>2</sub>O<sub>2</sub>- and/or ONOO<sup>-</sup>-modified C1q. Autoantibodies in SLE patients appeared to target the A-chain of C1q when blotted. Oxidatively-modified C1q may represent a superior target antigen for the detection of anti-C1q autoantibodies.