Discordance between anti-PLA2R antibody results by ELISA and Immunofluorescence methods

John Guly, Diane MacDonald, Chris Scott
Immunology, Barts Health NHS Trust, London, UK.

Introduction
Autoantibodies against the Phospholipase A2 Receptor (PLA2R) correlate with clinical disease activity in idiopathic membranous nephropathy.1 Antibody testing can be performed by ELISA or immunofluorescence. At Barts Health NHS Trust, borderline negative ELISA results between 5 and 14 kunits/L are additionally tested by immunofluorescence. The project aim was to review results that were negative on ELISA but positive on immunofluorescence.

Method
All ELISA anti-PLA2R antibody results between 5 and 14 kunits/L inclusive, with a corresponding immunofluorescence result, that were performed between 26/11/2014 and 19/12/2018 at Barts NHS Trust were obtained. The first chronological result for each patient was used.

Results were divided into concordant (negative ELISA, negative Immunofluorescence) and discordant (negative ELISA, positive immunofluorescence). Clinical significance of discordant results was further investigated.

Results
2,130 PLA2R tests were performed by ELISA. 550 were positive and 1,580 were negative. Of the negative results, 125 were between 5 and 14 kunits/L, and of these, 71 also had an immunofluorescence result. Disregarding duplicates left 44 samples. Of these 25 were concordant, and 18 were discordant with one sample showing obscured immunofluorescence.

Clinical details of the discordant samples were reviewed. In 7 patients, adequate clinical information was not available. All the other 11 patients had been previously diagnosed with membranous nephropathy before the sample date and had a previous positive anti-PLA2R antibody result recorded. 9 of the 11 patients had immunosuppression for membranous nephropathy before the sample date.

Discussion
The results show that performing immunofluorescence on samples with borderline negative anti-PLA2R antibodies by ELISA was not shown to identify any new patients with membranous nephropathy and is of uncertain additional benefit. Following discussion with the renal department, immunofluorescence is no longer performed on borderline ELISA anti-PLA2R antibody results.

References