Letters and Replies

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Dialysis treatment and regulatory T cells

Sir,

We read with attention the paper by Hendrikx et al., recently published in Nephrology Dialysis and Transplantation [1]. The authors observed a lower number and an impaired function of both CD4+CD25bright+ and Foxp3+ T cells in end-stage renal disease patients, especially in haemodialysis (HD), when compared to healthy controls. These results are very interesting since it has been demonstrated that these specific T cell populations, also known as regulatory T cells (Treg), play a key role in the control of the immune system [2,3]. Here, we report the results of a study which are in contrast with the ones by Hendrikx et al. In order to evaluate the effects of dialytic treatment on Treg cells subset, we studied seven patients (60.4 ± 10.3 years, m/f: 4/3) on standard thrice-weekly bicarbonate HD with a low-flux membrane (cuprophone (CU)) for at least 6 months. A whole blood sample was harvested before and after the dialysis (PRE and POST, respectively). Peripheral blood mononuclear cells (PBMC) were isolated from blood samples by lymphoprep gradient density centrifugation. Flow cytometry was performed in order to evaluate Treg cells, using anti-CD4, CD25 and Foxp3 mAbs (BD Biosciences, San Jose, USA). According to flow cytometry results, we identified CD4+CD25bright+ and Foxp3+ cells. Treg cell populations were quantified both as absolute number and as percentage of PBMC (n/%). Seven healthy sex–age-matched subjects (58.6 ± 7.6 years, m/f: 3/4) were the controls (CON).

There was a significantly higher number and percentage of Foxp3+ cells in HD patients when compared to CON (124 ± 49 cells/3.0 ± 1.2%, P < 0.05 vs PRE), while there was no significant difference of Foxp3+ cells between PRE and POST (243 ± 131 cells/4.6 ± 1.8% vs 249 ± 96 cells/5.2 ± 2.8%, respectively). Similarly, CD4+CD25bright+ cells had significantly increased in number in PRE and POST (75 ± 46 and 87 ± 39 cells, respectively), compared to CON (51 ± 21 cells, P < 0.05 vs POST).

It is noteworthy that our data are contrasting with those by Hendrikx et al., who reported a lower number of Treg cells in HD patients. Some considerations could explain this discrepancy. Firstly, since biocompatibility influences inflammation and immune response [4], it is reasonable that the use of different membranes could play an important role in Treg cells modulation. Concerning this, our patients were treated with CU, a low biocompatibility membrane, while the devices used by Hendrikx et al. have not been reported. Moreover, it is possible that different individual and clinical factors—such as age, comorbidity, underlying nephropathy, etc.—could have effects on Treg cells, which are completely unknown so far.

In conclusion, we demonstrated that patients on HD with bioincompatible membranes (CU) present a state of chronic Treg cells induction, which is not affected by dialytic treatment. However, the contrasting results reported and the substantial lack of data about the mechanisms of Treg cells modulation in HD patients call attention to the requirement of larger studies.

Conflict of interest statement. None declared.

Editorial Note: Dr Hendrikx et al. had been invited to reply to this letter but we did not receive a response.

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Comment on ‘Membranous glomerulonephritis secondary to Borrelia burgdorferi infection presenting as nephrotic syndrome’

Dear Sir,

We read with interest the case of membranous glomerulonephritis secondary to Borrelia burgdorferi infection reported by Dr. Papineni et al. [1]. It is indeed interesting that, after the first reports of glomerulonephritis secondary to Lyme disease [2,3], new cases of apparently...

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