BACKGROUND AND AIM

In order to prevent critical plasma protein depletion in regular plasmapheresis donors, total serum protein must be determined at least annually according to Danish national guidelines. Measuring of plasma albumin and plasma IgG at “suitable” intervals may serve as an alternative. However, conflicting results are reported in the literature regarding the impact of more or less intensive plasmapheresis programs on plasma proteins, and different countries have adopted different regulations concerning the manner and frequency of testing. The aim of the present study was to investigate the blood levels of IgG and albumin longitudinally in regular plasmapheresis donors.

METHODS

Since March 2012, the Capital Region Blood Bank in Denmark has performed routine plasmapheresis of group A and AB male donors. Forty-four healthy first-time volunteer male plasmapheresis donors underwent at least five procedures using Haemonetics cell separator (MCS®+ or PCS®2). Plasmapheresis was performed no more frequently than once every two weeks, according to national guidelines. Around 600 ml of plasma per procedure was collected. A pre-procedure blood sample was taken from the donor for analyses of plasma albumin and plasma IgG at every donation during the study.

RESULTS

- A total of 352 plasmapheresis procedures were performed.
- Levels of albumin and IgG fluctuated throughout the study with marked individual variation in patterns, but did not drop below normal at any time.
- Changes between two consecutive procedures were not correlated to the length of the interval (mean 56 days; range 14 - 336 days).
- Changes between baseline and the last procedure were not correlated to the number of procedures.
- In 12 of 15 donors, who donated 10 or more times, albumin tended to fall to a lower level during the study period (P < 0.01), while IgG levels were unaffected (Figs. 1 a and b).

CONCLUSIONS

- Plasmapheresis no more frequently than once every two weeks causes no or only minimal reductions in the blood levels of IgG and albumin.
- Further follow-up is required to evaluate whether it would be appropriate to measure IgG and albumin levels on a less frequent basis.