

The Eight-year Experience of Plasmapheresis in Patients with Neurological Diseases

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Abstract

Plasmapheresis (PP) removes component parts of plasma from patients, has been shown to be effective in the treatment of a variety of neurological autoimmune diseases including myasthenia gravis (MG), acute and chronic demyelinating polyneuropathy (AIDP and CIDP), polyneuropathies associated with inflammatory monoclonal gammopathy and myasthenic syndrome. The mechanism proposed for the actions of PP include removal of antibody, alloantibody, immune complexes, monoclonal protein, cytokines and antitoxin. According to the neurological report of American Academy of Neurology assessment of plasmapheresis in 1996, three diseases are based on class I evidence and with types A recommendation, Guillan-Barre Syndrome, CIDP and polyneuropathy with monoclonal gammopathies. Myasthenia gravis is class IV evidence with type C commendation. From November 1993 to December 2001, we treated 280 patients with various diseases by PP for a total of 421 courses. These included 148 cases of MG, 67 cases of AIDP or CIDP, 3 cases of multiple sclerosis and 2 cases of motor neuron disease. PP were carried out by and automated double filtration method (KM-8800, Kuraray or Plasauto-iQ, Asahi). The Plasmacure (Kuraray) or Plasmaflo AP05W (Asahi) were used as plasma separator and Evaflux 4A or 5A (Kuraray) or Casca-deflo AC 1770 (Asahi) as plasmafractionater. Each course of treatment consists of 4 to 5 sessions of apheresis. The processed volume of plasma is one calculated plasma volume. All patients tolerated PP well although 3% of them experienced hypotension. Our experiences are summarized as follows. For MG patients, both DF and IA effectively ameliorate symptoms and signs of MG. IA removes acetylcholine receptor antibody more effectively than DF does, but clinical effects between these two methods are similar. Daily schedule seems more effective than alternately daily schedule. The optimal number of PP sessions for each course is four based on the clearance of acetylchoine receptor antibody. The factors correlating with better clinical response are high MG score, non-thymoma patients, younger age at onset, and higher removal rate for immunoglobulin. For patients with AIDP, the median time to grade 2 (walk without support) was 19 days and to waning off the respirator was 9 days. The Clinical efficacy of double filtration PP in the treatment of AIDP was comparable to that of plasma exchange.
