P-10-50

Comparative study of the efficacy of plasma exchange, immunoadsorption plasmapheresis and corticosteroid administration in the treatment of Guillain-Barré syndrome

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We have retrospectively compared the efficacy of plasma exchange (PE, n=8), immunoadsorption plasmapheresis (IAPP, n=11), corticosteroid administration (PSL, n=12) and no treatment or supportive care (NAT, n=11) in the treatment of Guillain-Barré syndrome (GBS, functional grades of more than Hughes 3). The four groups of patients were compared on the following points: symptoms, motor nerve conduction velocity (MCV) and cerebrospinal fluid (CSF) protein concentration over the course. The results revealed that the duration of the worst symptoms was shortened more in the IAPP and PE groups than in the other groups. Decreases in CSF protein concentration were more significant in the IAPP and PE groups than in the other groups. There were no significant differences in the other parameters among the groups. IAPP and PE were equally effective. Given the risk of infections entailed in the use of PE and its lack of clear superiority over the IAPP, we recommend that IAPP should be applied first to treat GBS rather than PE.

P-10-51

IMMUNOADSORPTION PLASMAPHERESIS IN INFLAMMATORY DEMYELINATING DISEASE

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Severe cases of inflammatory demyelinating disease sometimes poorly respond to corticosteroid hormone therapy. We treated two cases of acute transverse myelopathy, two cases of Bab's concentric sclerosis and three cases of multiple sclerosis (MS) using high dose of methylprednisolone therapy and immunoadsorption plasmapheresis (IAPP). The clinical symptoms of all patients improved dramatically. In acute transverse myelopathy, we detected anti-spinal cord antibody in the patients sera using western blotting. After IAPP, the titer of antibody decreased. In MS, we examined the function of helper T cell subtype (Th1, Th2) using enzyme-linked immunosorbent assay. Before IAPP, Interferon γ which was produced by Th1 cells were dominant. After IAPP, IL-4 which was produced by Th2 cell were dominant and the level of Interferon γ producing cells was low. These results suggest that IAPP therapy may remove the disease causative antibodies and change the T cell subtype function from Th1 dominant to Th2 dominant. And these effects may be very important to improve the immunologic status and suppress the disease activity in inflammatory demyelinating diseases.

P-10-52

APHERESIS THERAPY IN GUILAIN-BARRÉ SYNDROME AND FISHER'S SYNDROME

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The Guillain-Barré syndrome (GBS) is an immune-mediated acute polyneuropathy. From 1992 to 1995, we have experienced 14 patients who developed GBS, including 5 patients with Fisher's syndrome (FS). The ganglioside antibody was detected in 4 out of 8 patients. All patients were treated with apheresis therapy. Apheresis therapy was initiated on 20.2 days from onset. One case was treated with plasma exchange, 8 cases were treated with double filtration plasma pheresis (DFPP), 2 cases were treated with immunoadsorption plasmapheresis (IAPP), and 3 cases were treated with DFPP and IAPP. In GBS, the mean time to improve one grade (Hughes' grading) was 15.6 days. In FS, improvement of neurogenic symptom was observed within 13.4 days. Apheresis therapy significantly improved clinical course.

Conclusion: We concluded that apheresis therapy may be of benefit in patients with GBS and FS.