Scripta Scientifica Medica, vol.28, Suppl.1,pp.97-98

TREATMENT WITH APHERESIS

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Apheresis (AP) has been applied in the complex treatment of more than 60 diseases, but a benefical effect has been proven for 33 of them (4). AP has an activating, immunomodulatory and detoxicating function (3). The best effect was achieved on diseases of immune and autoimmune genesis. One sole procedure is capable of removal of 80% of the circulating immune complexes (CIC) and 50% of the immunoglobulins (5).

The present investigation aims at establishing the effect of AP application to the complex treatment of immune nephropathies, multiple myeloma, pruritus and polyneuropathy in patients on hemodialysis, rheumatoid arthritis and some skin diseases.

A total of 427 AP have been performed in the Department of Nephrology and Heamodialysis during the period 1979-1991 (269 with the centrifugal method and 158 - plasmafiltrations) to 143 patients: 39 with immune nephropathies, 34 with multiple myeloma and 34 on periodic haemodialysis (three with polyneuropathy, 20 with pruritus, and 11 with both complications), 5 patients with rheumatoid arthritis, 16 with erythrocytaemia associated with respiratory failure, 9 patients with skin diseases, 4 with phalloid intoxication and two donor cytophereses (1,2).

Two patients with homozygous form of familial hypercholesterolaemia II A-type according to Fredericksen received 44 and 48 weekly LDL-aphereses, respectively. Plasmapheresis was initially performed, whereupon the separated plasma was passed through columns containing monoclonal antibodies against low density lipoproteins.

AP was carried out in two different ways: with "Haemonetics M-30" and with membrane plasmaseparator "Plasmaflux": 1150 up to 2200 ml of plasma per procedure was being removed in the different groups in periods of 2-5 days. The removed plasma was substituted with saline and plasma infusions in approximately equal quantities. The effect of AP treatment was assessed through clinical and laboratory data: CIC, paramecium test for plasma toxicity, phagocytic activity, total serum proteins and specific tests for the different diseases (viscosity, histamine, specific antibodies, etc.).

Of our cases, 83,7% of the patients with immune nephropathies

that had in time been treated with AP and immunosuppressions in combination went into a stage of remission, which is still going on 52,7 months after. The immunosuppressive therapy was applied at lower dosage to nine patients. The treatment exerted no effect on patients with pre-end stage renal disease.

A clinical remission of 8,1 months was achieved in 74,8% of the patients on periodic dialysis with pruritus after 3,4 APs on average, in correlation with lowering the level of serum histamine. Electromyographic and clinical improvement of polyneuropathy was registered in 64,8% of the treated 8,4 months after the application of 4,9 aphereses on average.

The application of a single procedure every 2-3 months in patients with myeloma multiplex lowers viscosity, improves microcirculation and slows down the progression of myeloma nephropathy. The cytostatic therapy was reduced in eight patients.

Statistically significant diminution of pathologically increased plasma viscosity, normalization of haematocrit and partial pressure of oxygen were noted after the second erythrocytopheresis in patients with chronic respiratory failure.

The total plasma cholesterol was decreased with 50,49% on average with LDL-apheresis in the patients with familial hypercholesterolemia, and the treatment frequency had to be at last once a week for a good effect to be obtained.

The results in patients with rheumatoid arthritis, phalloid intoxication and skin diseases were controversial.

CIC level changed most significantly after AP in patients with immune nephropathies and rheumatiod arthritis.

The best improvement of macrophageal activity of polymorphonuclear leukooytes was registered in patients on haemodialysis with immune nephropathies and rheumatoid arthritis. After 2-3 APs viscosity was brought to normal in patients with respiratory failure and myeloma multiplex. A considerable decrease of plasma toxicity was achieved in patients on hemodialysis and phalloid intoxication.

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