

Plasmapheresis (Plasma Exchange)

Plasmapheresis is a process involving the following steps:

- Whole blood is withdrawn from the person.
- The liquid portion or plasma is removed from the blood and replaced.
- The blood, with all its red and white blood cells, is transfused back into the person.

This process is a successful method for treating autoimmune diseases such as myasthenia gravis and Guillain-Barré Syndrome, because it removes the circulating antibodies that are thought to be responsible for these diseases.

It is not clear whether plasmapheresis is of benefit in the short- or long-term treatment of MS, and its use in MS remains controversial.

Because MS may also involve an autoimmune process—where the body is attacked by its own immune system—and because demyelinating factors have been found in plasma from MS patients, plasmapheresis has been tried as a treatment for MS.

Mixed Results in Progressive Forms of MS

Studies using plasmapheresis in patients with primary and secondary progressive MS have yielded mixed results.

One carefully controlled study among MS patients who were also receiving medication that suppresses the immune system, suggests that patients who received both plasmapheresis and immunosuppressants did better than those receiving immunosuppressants alone. The apparent advantage of plasmapheresis was most pronounced within the first five months of treatment. The study was placebo-controlled to make sure that responses to treatment were based on therapeutic benefit, rather than a psychological effect of receiving treatment. The study was also double-blind—neither the researchers nor the patients knew who was receiving active treatment until the study was over.

Other studies by other investigators did not find plasmapheresis when combined with chemotherapy to be any more effective than chemotherapy alone.

Minimally Shortened Recovery Time from Exacerbations

A more recent clinical trial studied the effect of plasmapheresis in treating acute exacerbations. An exacerbation—also known as an attack, relapse, or flare—is a sudden worsening of an MS symptom or symptoms, or the appearance of new symptoms, which lasts at least 24 hours and is separated from a previous exacerbation by at least one month.

In this multicenter study, 116 patients having an exacerbation received ACTH and immunosuppressant medication, and either plasmapheresis or “sham” plasmapheresis (in which the plasma withdrawn from the patient was returned, instead of being replaced). The results indicated a minimally shortened time to recovery in the plasmapheresis treated group compared to the control group. No long-term benefits were observed, at a 12-month follow-up.

A Recent Study On Plasma Exchange

In a recent study on plasma exchange the investigators concluded that plasma exchange might contribute to recovery from an acute attack in people with MS or other inflammatory demyelinating diseases who have not responded to standard steroid treatment.

They recommend, therefore, that this treatment *only be considered for individuals experiencing a severe, acute attack that is not responding to high-dose steroids*. Since the vast majority (90%) of people experiencing acute attacks respond well to the standard steroid treatment, plasma exchange would be considered a treatment alternative only for the 10% or so who do not. For those 10%, however, plasma exchange may offer an important and beneficial treatment option.

Side Effects Include Infection and Blood Clotting Problems

Side effects of plasmapheresis therapy include occasional infection and blood clotting problems.

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See also...

Sourcebook

- Autoimmune Disease
- Chemotherapy
- Clinical Trials
- Guillain-Barre Syndrome
- Research

Society Web Resources

- Progressive MS
www.nationalmssociety.org/ProgressiveMS
- Spotlight: Exacerbations
www.nationalmssociety.org/Exacerbation
- Spotlight: MS and Vision
www.nationalmssociety.org/Vision
- Treatments
www.nationalmssociety.org/Treatments

Book

Kalb R. (ed.) *Multiple Sclerosis: The Questions You Have; The Answers You Need* (3rd ed.). New York: Demos Medical Publishing, 2004.

—Ch. 3 Treatments

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