EXTRACORPOREAL IMMUNOADSORPTION USING PROTEIN A COLUMNS
THE801.018

COVERAGE:

Extracorporeal immunoadsorption (ECI) using a protein A column MAY BE ELIGIBLE FOR COVERAGE as a treatment for patients with idiopathic thrombocytopenic purpura (ITP) or hemolytic uremic syndrome unresponsive to other therapies with either a platelet count:

• below 20,000, or
• below 50,000 with evidence of bleeding.

Extracorporeal immunoadsorption (ECI) using protein A columns may be eligible for coverage as a treatment for signs and symptoms of moderate to severe rheumatoid arthritis in adult patients with long-standing disease who have failed or are intolerant to disease modifying anti-rheumatic drugs.

Other applications of extracorporeal immunoadsorption are investigational, including, but not limited to, treatment of cancer, autoimmune diseases other than rheumatoid arthritis, or for renal transplant recipients.

DESCRIPTION:

Extracorporeal immunoadsorption (ECI) using protein A columns, also referred to as protein immunoadsorption therapy, consists of highly purified protein A (isolated from Staphylococcus aureus) that is bonded to a silica matrix. Plasma is collected from the patient in apheresis procedure and then passed over the column. Circulating immune complexes (CICs) and IgG bind to protein A and are thus selectively removed from the plasma. The plasma can then be returned to the patient, thus eliminating the need for a plasma exchange.

Pathogenic levels of IgG and circulating immune complexes are associated with a number of diseases, such as ITP, hemolytic uremic syndrome, and red cell aplasia. In the past, plasma exchange was used to remove CICs and IgG. ECI represents a selective removal of pathogenic substances and thus has been investigated as an alternative to plasma exchange, particularly for patients with ITP.

The Prosorba Column is a Food and Drug Administration (FDA) approved immunoadsorption protein A column.

For treatment of ITP, patients typically undergo 6 treatments over a course of 2-3 weeks.

For treatment of rheumatoid arthritis, patients typically undergo 6 treatment per week for 12 weeks.

RATIONALE:

ITP is characterized by rapid platelet destruction and typically
appears in young women and also in HIV positive patients. It is usually a relatively benign disorder in its chronic form, and treatment is usually not needed if the platelet count remains above 50,000/ml. In cases involving serious bleeding or with platelet counts less than 20,000/ml, ECI has successfully reversed the immune thrombocytopenia by removal and modulation of platelet specific IgG and circulating immune complexes. Treatment of ITP was the original FDA-labeled indication for extracorporeal immunoadsorption.

In 1999, ECI received an additional FDA-labeled indication for the treatment of "signs and symptoms of moderate to severe rheumatoid arthritis in adult patients with long-standing disease who have failed or are intolerant to disease modifying anti-rheumatic drugs (DMARDS)." DMARDS include:

- Methotrexate (Rheumatrex),
- Hydroxychloroquine (Plaquenil),
- Sulfasalazine (Azulfidine),
- Gold (Ridaura, Solganal),
- Azathioprine (Imuran),
- D-penicillamine (Depen, Cuprimine)
- Etanercept, and
- Leflunomide.

The new FDA-labeled indication was based in part on a randomized, double-blind sham placebo controlled trial of 91 patients. Trial participants had Rheumatoid Arthritis for an average of 15 years and had failed an average of 4.2 DMARDS prior to entry. Patients received weekly treatments for each of 12 weeks and were followed for an additional 7 to 8 weeks. Treatment effect was assessed by the number of tender and swollen joints and pain scores, using a scoring system developed by the American College of Rheumatology. Improvement was defined as at least a 20% improvement in at least three of the following five criteria:

- Patient pain assessment,
- Patient assessment of global disease activity,
- Physician assessment of global disease activity,
- Patient assessment of physical function, and
- A health functional status questionnaire.

A total of 31.93% of patients in the treatment arm showed improvement compared to 11.4% in the sham/placebo group. Among those experiencing improvement during the trial, the median duration of response was 32 weeks. Originally, the investigators had planned to enroll 178 patients but at an interim analysis the trial was stopped early due to the significant comparative improvement in the treatment group.

ECI has also been used in the treatment of hemolytic uremic syndrome, which is characterized by thrombocytopenia, microangiopathic hemolytic anemia, and progressive renal failure (thought to be related to circulating immune complexes). Patients treated with immunoadsorption columns have achieved a definite increase in platelet count, decrease of hemolysis, and stabilization of renal function. ECI has also been investigated as a technique to reduce the number of antibodies reactive against human lymphocyte antigens in highly sensitized potential kidney transplant recipients. While a number of case series
have been reported, there are inadequate data to validate the
treatment effectiveness. Similarly, there are scattered reports of
using ECI to treat various autoimmune diseases, such as systemic lupus
erythematosus, but the literature is inadequate to permit conclusions.

Various malignancies have also been treated with ECI. The proposed
rationale is that cancer patients are known to have depressed immune
functions due to various factors in the plasma and that ECI might
remove these blocking antibodies and immune complexes. Fennelly and
colleagues conducted a phase II trial of ECI in patients with
metastatic breast cancer and reported that ECI was not associated with
antitumor activity, and that patients with breast cancer did not
appear to have higher levels of circulating immune complexes compared
to normal controls.

DISCLAIMER:

State and federal law, as well as contract language, including
definitions and specific inclusions/exclusions, takes precedence over
Medical Policy and must be considered first in determining coverage.
The member’s contract benefits in effect on the date that services are
rendered must be used. Any benefits are subject to the payment of
premiums for the date on which services are rendered. Medical
technology is constantly evolving, and we reserve the right to review
and update Medical Policy periodically.

HMO Blue Texas physicians who are contracted/affiliated with a
capitated IPA/medical group must contact the IPA/medical group for
information regarding HMO claims/reimbursement information and other
general polices and procedures.

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