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## Plasma Exchange Therapy in Patients with Complex Regional Pain Syndrome.

Aradillas E, Schwartzman RJ, Grothusen JR, Goebel A, Alexander GM<sup>1</sup>.

### Author information

### Abstract

**BACKGROUND:** Complex regional pain syndrome (CRPS) is a severe chronic pain condition that most often develops following trauma. Some investigators have postulated CRPS to be a post-traumatic neuralgia associated with distal degeneration of small-diameter peripheral axons. Intravenous immunoglobulin treatment (IVIG) has been shown to be efficacious in the treatment of painful polyneuropathies. Some CRPS patients have been reported to respond to IVIG. Based on a recent hypothesis proposing an autoimmune etiology for CRPS, we decided to offer plasma exchange therapy (PE) to CRPS patients with a clinical presentation suggestive of a small fiber neuropathy.

**OBJECTIVES:** To evaluate the efficacy of PE in a group of CRPS patients with a clinical presentation suggestive of a small fiber neuropathy that were either non-responders or poor responders to their current treatment.

**STUDY DESIGN:** This is a retrospective case series study of CRPS patients that met the Budapest diagnostic criteria for CRPS and received PE as treatment for their illness between September 2012 and June 2014. Approval for this review was granted by the Drexel University Institutional Review Board.

**SETTING:** Drexel University College of Medicine pain clinic

**METHODS:** Thirty-three CRPS patients that received PE treatment were retrospectively studied. The workup for these patients consisted of a complete medical and pain evaluation, the completion of the short-form McGill questionnaire, quantitative sensory testing (QST), and skin punch biopsy. The PE protocol was as follows: all patients had a series of PE therapies (range 5 to 11 with a mean of 7.2) performed over a 2 to 3 week period. Following the PE series, the patients had a pain evaluation and completed the short-form McGill questionnaire. Patients that responded to PE were offered maintenance therapy consisting of either weekly PE or other immune modulating agents. In these patients, their pain was evaluated during the maintenance phase.

**RESULTS:** Thirty of the 33 patients demonstrated significant ( $P < 0.01$ ) median pain reduction of 64% following the initial series of PE. Three patients demonstrated no improvement. Twenty-four patients are receiving maintenance therapy, the pain reduction in these patients following the initial PE series has been maintained with either weekly PE ( $n = 15$ ), oral immune modulating agents ( $n =$

8), or IVIG (n = 1). The remaining 6 patients are not receiving maintenance therapy and their pain has returned to pre-treatment levels. In addition, this study suggests that patients with the greatest loss of small fibers and the greatest temperature sensory deficits are most likely to benefit from PE therapy.

**LIMITATIONS:** The major limitation of this study is its retrospective nature which includes non-randomization, non-blinding, and an uncontrolled design.

**CONCLUSIONS:** This study shows that PE is effective in a subset of patients with severe long-standing CRPS and that the reduction in pain following the initial series of PE treatments can be maintained on a weekly PE schedule, IVIG, or with other immune modulating drugs. Large, randomized, placebo controlled studies may be required to confirm and expand these results. Such studies may lead to new therapies for this severe life-altering condition.

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**MeSH terms, Substance**

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