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Original Research Paper

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TO STUDY THE EFFECT OF THERAPEUTIC PLASMA EXCHANGE IN PATIENTS WITH TRANSVERSE MYELITIS (TM) PATIENTS

Dr Kuldeep Jareda	Junior resident -3 Department of Immunohematology and Transfusion Medicine SMS Medical College Jaipur
Dr Shailendra Singh*	Junior resident -3 Department of Immunohematology and Transfusion Medicine SMS Medical College Jaipur.*Corresponding Author
Dr. Sunita Bundas	Senior Professor, Department of Immunohematology and Transfusion Medicine, SMS Medical College Jaipur

ABSTRACT

BACKGROUND- An integrated understanding of therapeutic plasma exchange (TPE) effects on immunoglobulins, autoantibodies, and natural or acquired (vaccine) protective antibodies in patients with autoimmune myasthenia gravis (MG) is lacking. Prior studies measured TPE effects in healthy volunteers or heterogeneous autoimmune disease populations.

METHODS- This descriptive cross-sectional study was conducted in Department of Immunohematology & Transfusion Medicine, Blood Bank and Department of Neurology SMS hospital, Jaipur.

RESULTS- Out of total 7 patients of TM 6 patients were improved and 1 patient failed to respond to therapy.

CONCLUSION- Therapeutic plasma exchange is a first line of management for most of the neuroimmunological disorder.

KEYWORDS : TPE, Auto-immune, Outcome,TM

INTRODUCTION

Neuro-immunological disorder consists of disease in which the immune system seems to attack the nervous system. In order to consider TPE as a therapeutic option, two condition need to be present, a disease state related to the presence of a pathological substance in the plasma and the possibility of removing the substance in a sufficient amount to permit resolution of the disease. TPE is used to treat immunologically mediated peripheral neuropathies including chronic inflammatory demyelinating polyneuropathy, guillain-barre syndrome and other disorder such as myasthenia gravis. [1]

In a recent report of the Therapeutics and Technology and Assessment Subcommittee of the American Academy of Neurology, TPE was established as an effective course of treatment for many diseases; it is offered in cases of severe acute inflammatory demyelinating polyneuropathy (AIDP)/GBS, in the short-term management of CIDP (Category-1), and is probably effective and should be considered for mild AIDP/GBS. There have been some other case reports and small studies in which it was claimed that TPE might be effective for some other neurologic diseases such as multiple sclerosis, neuromyelitis optica, acute disseminated encephalomyelitis (ADEM), Stiff-man syndrome, Bickerstaff's encephalitis and hemorrhagic leucoencephalitis . Additionally, it has been suggested that TPE may also be successful in treating complications of the central nervous system resulting from systemic hematologic diseases such as thrombocytopenic purpura.[2]

MATERIAL AND METHODS

STUDY AREA: Department of Immunohematology & Transfusion Medicine, Blood Bank and Department of Neurology SMS hospital, Jaipur.

STUDY PERIOD: Over a period of one year after approval of plan research review board of institute from June 2019 till desired sample size is achieved.

TYPE OF STUDY: Cross-sectional

DESIGN OF STUDY: Descriptive

STUDY GROUP: Patients with myasthenia gravis

INCLUSION CRITERIA- Patients with myasthenia gravis

EXCLUSION CRITERIA- Disorder in which role of apheresis therapy is not established.

Patient who have experienced a serious adverse event associated with the first TPE procedure.

Patients who have not given informed consent.

Patients who is medically not fit for TPE

RESULTS

Table 1. Clinical outcome

Clinical outcome	No of patients	Percentage
Improved	6	85.72
Failed to response	1	14.28
Total	7	100.00

Out of total 7 patients of TM 6 patients were improved and 1 patient failed to respond to therapy.

DISCUSSION

Neuro-immunological disorder consists of disease in which the immune system seems to attack the nervous system. It is known that antibodies and immune complexes play a crucial role in many kinds of autoimmune disease. In therapeutic plasma exchange (TPE) the extracellular component of blood (plasma) is separated from the cellular component (plasmapheresis), replaced with a colloid or crystalloid substitute, reintegrated with the cellular component, and returned to the patient. The aim of treatment is to remove putative disease mediators from the body such as toxic macromolecules and pathogenic autoantibodies.[3]

Transverse myelitis (TM) is a rare neurological condition in which the spinal cord is inflamed. TM is characterized by weakness and numbness of the limbs, deficits in sensation and motor skills, dysfunctional urethral and anal sphincter activities, and dysfunction of the autonomic nervous system that can lead to episodes of high blood pressure. Signs and symptoms vary according to the affected level of the spinal cord. The underlying cause of TM is unknown. The spinal cord inflammation seen in TM has been associated with various infections, immune system disorders, or damage to nerve fibers, by loss of myelin. [58] It affects the entire cross-section of the spinal cord.[3]

Newsom-Davis (1979) [5] compared the long-term effect of

plasma exchange plus immunosuppressive drug in seven participants with myasthenia gravis to the effect of immunosuppressive drug alone in seven participants with myasthenia gravis. Plasma exchange was associated with improvement (100%) in all seven participants which has a higher outcome when compared to our study.

Olarte MR (1978-1980)[6] studied effect of plasmapheresis in myasthenia gravis among 21 patients. 350 plasma exchanges were performed on 21 MG patients, in each exchange about two litres of plasma were exchanged for two weeks. No adverse effects were attributed to the procedure, except transient thrombocytopenia. Out of 21 patients, 17 patients (81%) improved and 4 patients failed to improve after TPE for 2 weeks which was very similar to our result

CONCLUSION

Therapeutic plasma exchange is a first line of management for most of the neuroimmunological disorder.

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