

Therapeutic Plasma Exchange Effect on Neuromyelitis Optica Spectrum Disorder

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Introduction

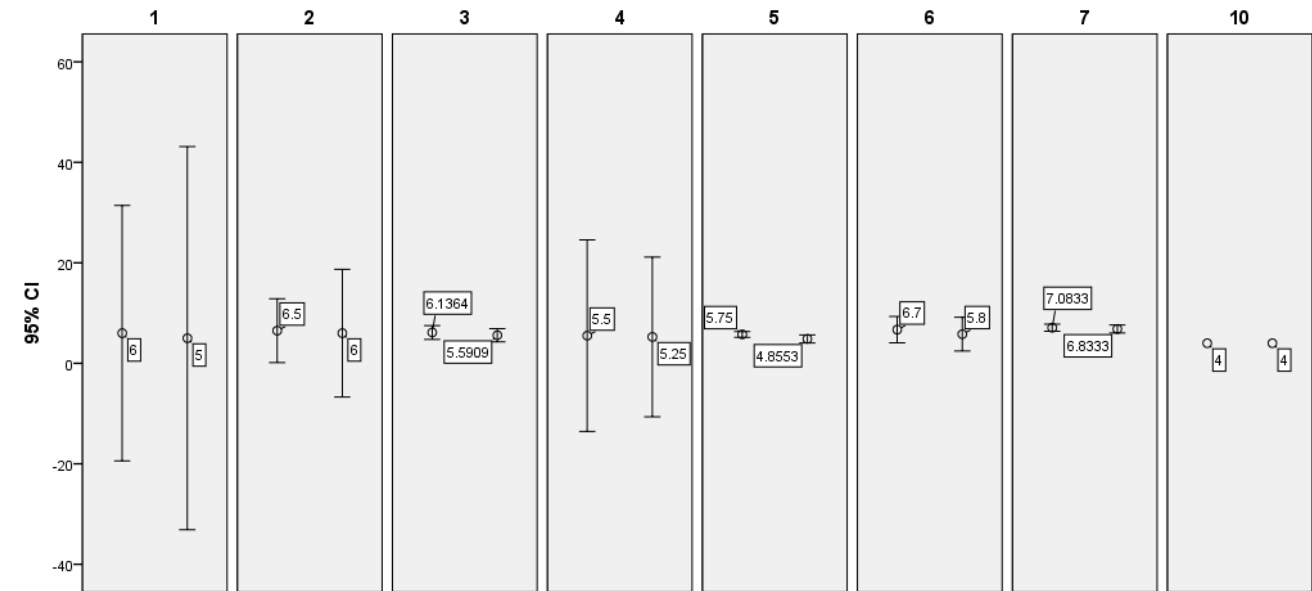
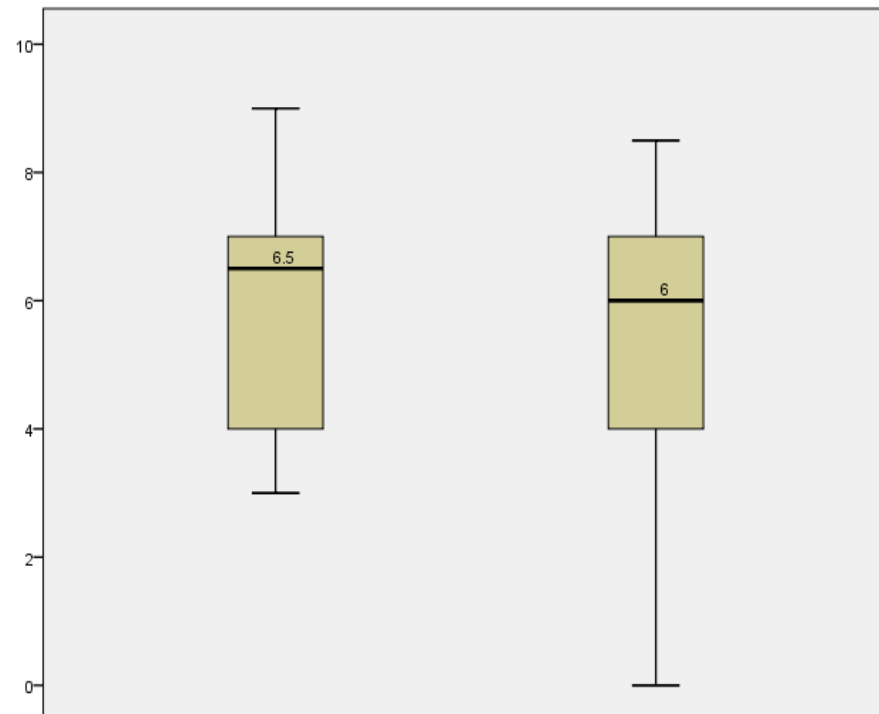
Neuromyelitis Optica Spectrum Disorders (NMOsd) are a group of inflammatory disorders of the central nervous system (CNS) that are characterized by episodes of humoral-mediated inflammation usually associated with the presence of autoreactive IgG antibodies against aquaporin-4 water channels (AQP4-IgG). Due to the strong humoral phenomena underlying NMOsd, plasma exchange (PLEX) has proved to be a beneficial therapy in patients with severe attacks^{1,2}.

Objective

Defining the efficacy of PLEX in NMOsd patients treated in Mexico.

Methods

In an observational and retrospective study, all NMOsd patients in our institution diagnosed with Wingerchuk 2015 criteria who were treated with PLEX during 2010-2019 were included. As per institutional protocol all patients received 5 doses of 1 gr/day methylprednisolone boluses. In discretion of the treating neurologist, PLEX could be started concomitant with the steroids. Non-parametric Wilcoxon test was used for evaluation of the median difference between the initial and the subsequent EDSS. P values ≤ 0.05 were considered statistically significant.



Results

We identified a total of 89 patients treated with PLEX during a NMOsd attack. 70 (78.7%) were female and 19 (21.3%) were male. The mean age at onset was 38 (SD 12.97) years. The clinical syndrome was optic neuritis (ON) in 14 (15.7%), bilateral ON in 6 (6.7%), LETM 25 (28.1%), STM 11 (12.4%), ON+LETM 1 (1.1%) and brainstem syndrome in 3 (3.4%) patients. 27 (30.3%) were previously known with a NMOsd diagnosis, while 62 patients were diagnosis posterior to the debut. The mean time in days from symptomatic onset to starting PLEX was 20.97 (SD 18.16 1-90) days. The Mean number of PLEX exchanges was 5 (SD 2.307). A significant decrease with PLEX from a median EDSS of 6.5 (IQR 3.0, 3-9) to 6.0 (IQR 3.0, 0-8.5) was noted ($p < 0.001$).

Discussion

Previous studies in NMOsd relapses revealed that treatment with steroids and an additional maneuver offered a functional recovery in around 19.1% of the patients. In this large cohort of NMOsd patients with an acute relapse we found a significant decrease in the EDSS with treatment with Steroids and PLEX. In addition, we observed that the result was also correlated with the number of PLEX cycles received. The benefit of the PLEX maneuver was also independent of the clinical syndrome. Finally, it appears that previously used maintenance therapy is not related to the response to acute management of a relapse in NMO.

Conclusion

PLEX appears to be an effective therapy during relapses in NMOsd patients.

References

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2. Srisupa - Olan T, Siritho S, Kittisares K, Jitrapaikulsan J, Sathukitchai C, Prayoonwiwat N. Beneficial effect of plasma exchange in acute attack of neuromyelitis optica spectrum disorders. *Multi Scler Relat Disord*. 2018