

# TREATMENT AND FOLLOW-UP OF PATIENTS WITH NMO AQP4 SEROPOSITIVE DIAGNOSED IN THE NATIONAL INSTITUTE OF NEUROLOGY AND NEUROCIROGIA MANUEL VELASCO SUAREZ.

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## Introduction

Neuromyelitis Optica (NMO) is an autoimmune "aquaporinopathy" of the central nervous system that causes inflammatory demyelinating lesions primarily in the spinal cord and optic nerve, leading to paralysis and blindness. The majority of NMO patients are seropositive for autoantibodies against AQP4 (AQP4-IgG), the main water channel of astrocytes.

The present study aims to establish a relationship between seroconversion and different treatment and clinical outcomes in the follow-up of AQP4+ NMO patients.

## Methods

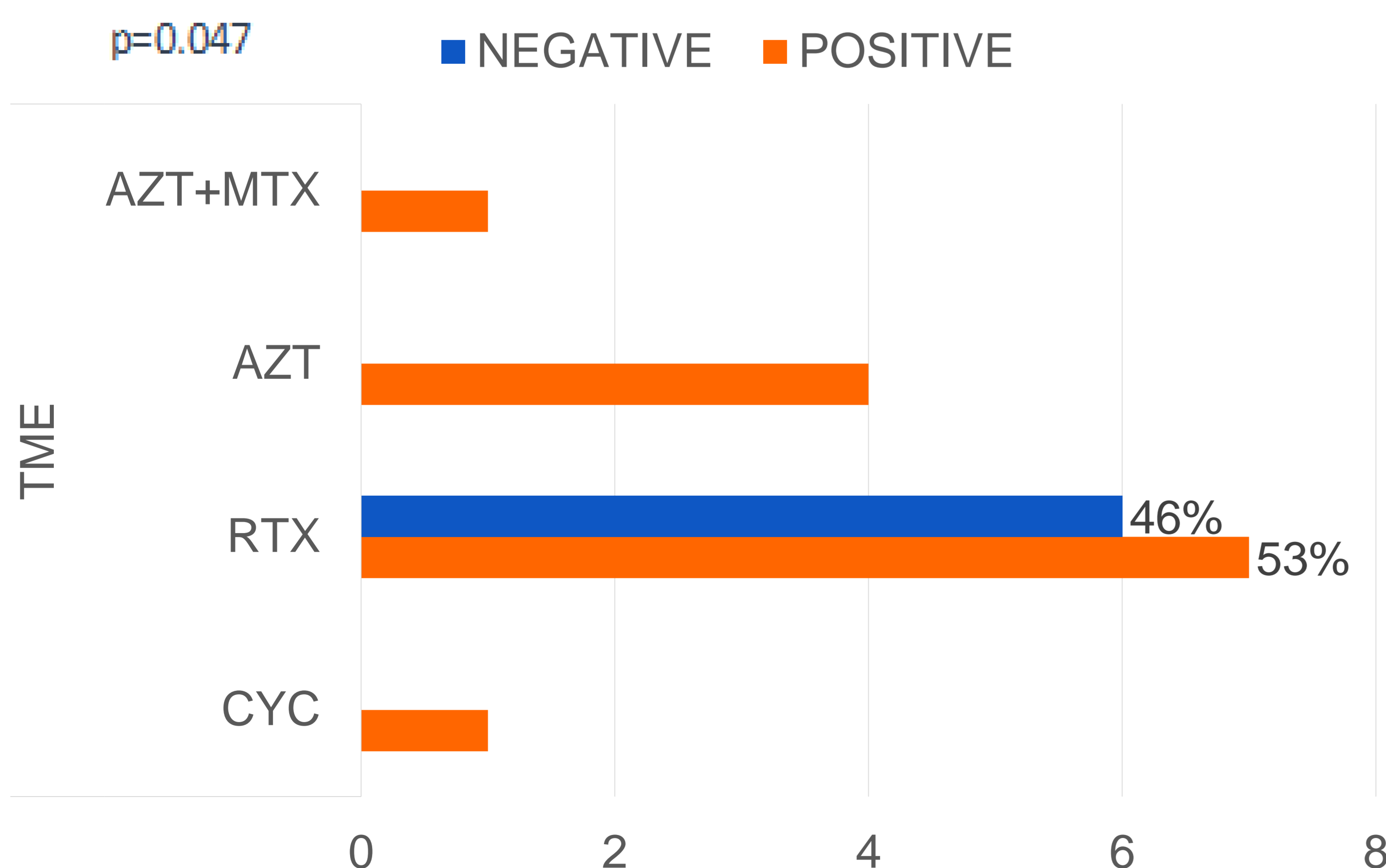
A prospective and longitudinal descriptive study was carried out in our population. NMO Patients diagnosed by Wingerchuk 2015 criteria and positive serostatus of AQP4-IgG evaluated by indirect immunofluorescence (IFI) method and a subsequent AQP4-IgG serostatus at any given time were included.

Clinical outcomes were defined by the changes in the annualized relapse rate (ARR) and EDSS score between the initial and subsequent evaluation.

## Results

Of a total of 43 patients diagnosed with positive AQP4 Optical Neuromyelitis treated in the Inflammatory, Autoimmune and Demyelinating Diseases department of the Central Nervous System, 19 patients were identified that met the inclusion criteria, of which 17 (89.5%) were women and 2 (10.5%) men. The mean age at diagnosis was 47.84 years (21-68 years, SD 12.812). 18 patients (69.2%) had 1-5 years of disease evolution time.

### AQP4 CONTROL'S RELATIONSHIP VS DISEASE MODIFYING TREATMENT

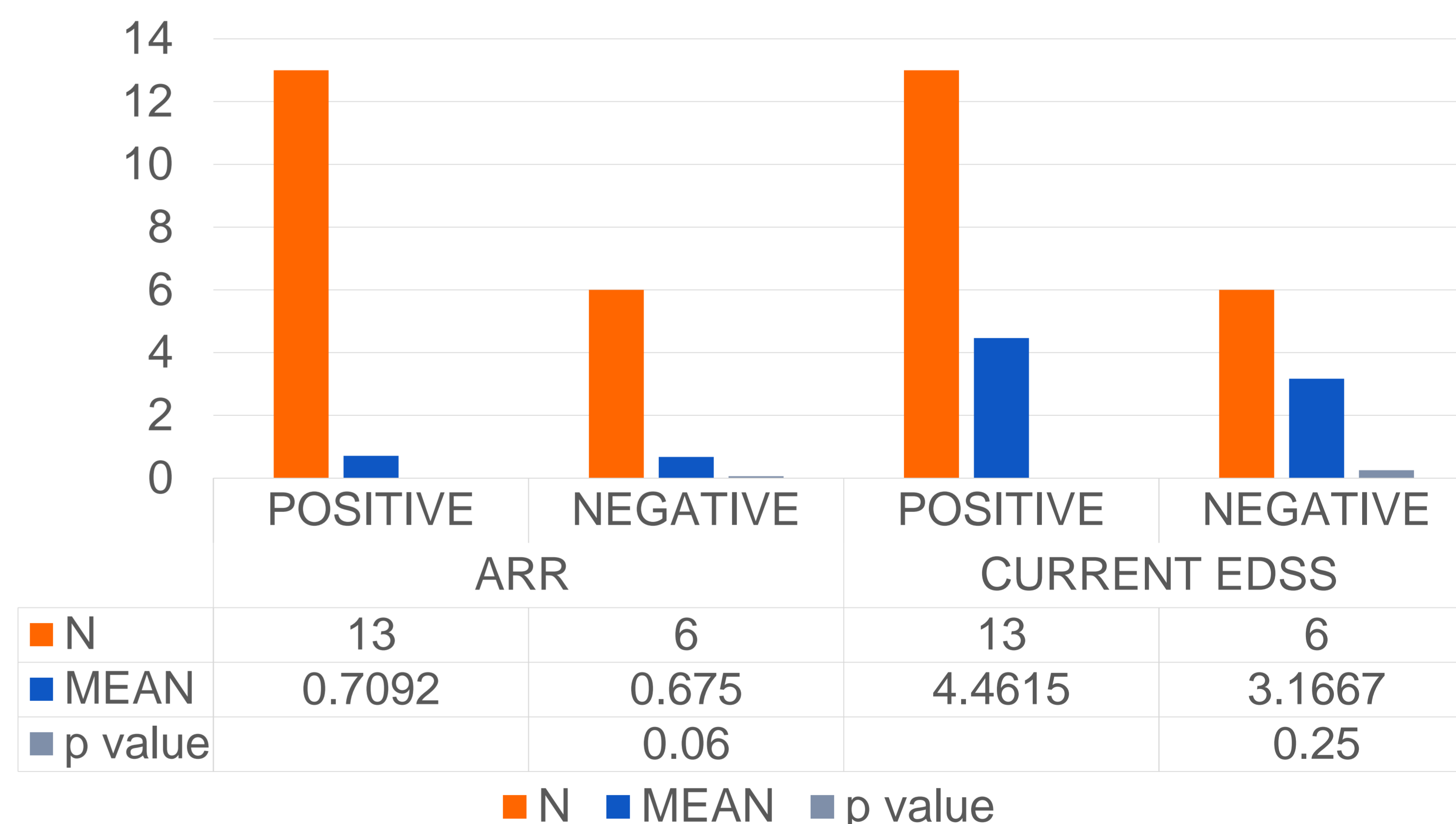


Chronic treatment was evaluated individually according to clinical and socioeconomic factors. Disease modifying Rituximab (RTX) (26.3%), cyclophosphamide (CYC) (5.3%), azathioprine (AZT) (21.1%), CYC+ RTX (21.1%), CYC + AZT+ RTX (21.1%), AZT+ MTX (methotrexate) (5.3%). Due to adverse reactions, failure (relapse on medication) or intolerance 63.3% were escalated to treatment with Rituximab.

According to the objective of the study, seronegative conversion was documented in 6 patients of the group treated with RTX as initial of second line DMT (n=13) but no seronegative conversion was found in the other DMT (p=0.047).

A lower ARR and an improvement in the current EDSS was observed in those patients with negative AQP4 after rituximab treatment (mean ARR 0.6, mean EDSS 3.1), unlike those who remained positive which had a higher ARR and EDSS (mean ARR 0.7, mean EDSS 4.4).

### RELATIONSHIP OF CURRENT EDSS, ARR VS AQP4 CONTROL



## Conclusion

The Effective therapeutic follow-up of seropositive NMO can be related to the subsequent seronegativity of the AQP4 antibody, which was statistically significant for treatment with Rituximab, so it is worthwhile to perform serum control studies of AQP4 and see its behavior over time, combined to clinical follow-up, taking it as a prognostic marker (risk of relapse) vs. severity and / or progression.

### References

Paola Valentino, MSc et al. Aquaporin-4 antibody titration in NMO patients treated with rituximab. *Neurol Neuroimmunol Neuroinflamm* 2017;4; DOI 10.1212/NXI.0000000000000317

Masoud Etemadifar et al, Efficacy and safety of rituximab in neuromyelitis optica: Review of evidence. [Downloaded free from <http://www.jmsjournal.net> on Thursday, September 26, 2019, IP: 201.141.229.174]