



# Treatment strategies for neuromyelitis optica spectrum disorder relapses: a study from a nationwide registry in Argentina



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## INTRODUCTION

We aimed to assess the treatment strategies selected in patients with neuromyelitis optica spectrum disorder (NMOSD) experiencing relapses, including their frequency, types, and response after 6 months based on the Expanded Disability Status Scale (EDSS) score.

## METHODS

Retrospective study: patients from the Argentinean MS and NMOSD registry. We collected data on patient demographics, clinical and radiological findings, and the treatments administered. At 6 months, treatment response: -GOOD: EDSS decreased by  $\geq 1$  point after a nadir EDSS score  $\leq 3$ , or by  $\geq 2$  points after a nadir EDSS score  $> 3$  -POOR: EDSS score decrease was slighter, -ABSENT: EDSS remained unchanged or worsened. We used ordinal logistic regression to identify statistical associations with the outcome.

Table 1: Demographic and clinical features of NMOSD according to the serotype

	All NMOSD N=120	AQP4-IgG+ NMOSD N=75	AQP4-IgG- NMOSD N=45	P- value
Mean age at disease onset, SD (years)	39.5 $\pm$ 5.7	38 $\pm$ 5	41 $\pm$ 6.5	NS
Female, n (%)	94 (78)	63 (84)	31 (69)	NS
Median EDSS at disease onset, SD (years)	3.2 $\pm$ 2	3.3 $\pm$ 2.2	3.1 $\pm$ 1.9	NS
Disease duration, SD, (years)	6.1 $\pm$ 3	6.1 $\pm$ 3	6.0 $\pm$ 3.1	NS
Mean time elapsed between first attack and first treatment SD, (months)	59.6 $\pm$ 13.5	56 $\pm$ 17	63.2 $\pm$ 10	NS
Mean time elapsed between first relapse and treatment for relapse, SD, days	15.5 $\pm$ 5	13 $\pm$ 6	18 $\pm$ 4	NS
<b>Assays</b>				
Tissue-based IIF	31 (25.8)	21 (28)	11 (25)	NS
CBA	83 (69.1)	51 (66.6)	32 (70)	NS
Unknown	5 (4.1)	3 (6.6)	2 (5)	NS

## RESULTS

120 NMOSD patients [seropositive N=75 and seronegative N=45] who experienced **250 relapses** and received **248 treatments**. Most common treatment: **intravenous methylprednisolone (78.6%)**, followed by **plasmapheresis (16.9%)**.

At 6 months: the majority of patients showed a “good” response to the attack treatments (71.4% with IVMP and 79% with PLEX), but a significant proportion did not respond (between 18.6% and 11%)

We did not observe differences in treatment response based on serostatus.

**Predictors of “good” response** in our regression model were: **younger age at disease onset** (OR:3.54, CI95% 2.45-5.01,  $p < 0.0001$ ) and **a short delay from onset of relapse to treatment initiation** (OR:1.56, CI95% 1.22-2.13,  $p = 0.004$ ).

Table 2. Predictors of “good” response from relapses in all patients included.

“Good” response	AQP4-IgG+ NMOSD N=75	AQP4-IgG- NMOSD N=45	Total N=120
IVMP (n=62 AQP4-IgG+ / N=36 AQP4-IgG-)	47 (75.8%)	25 (69.4%)	70/98 (71.4%)
PLEX (N=13 AQP4-IgG+ / N=6 AQP4-IgG-)	11 (84%)	4 (66%)	15/19 (79%)

Abbreviations: IVMP: High-dose IV methylprednisolone, PLEX: plasmapheresis

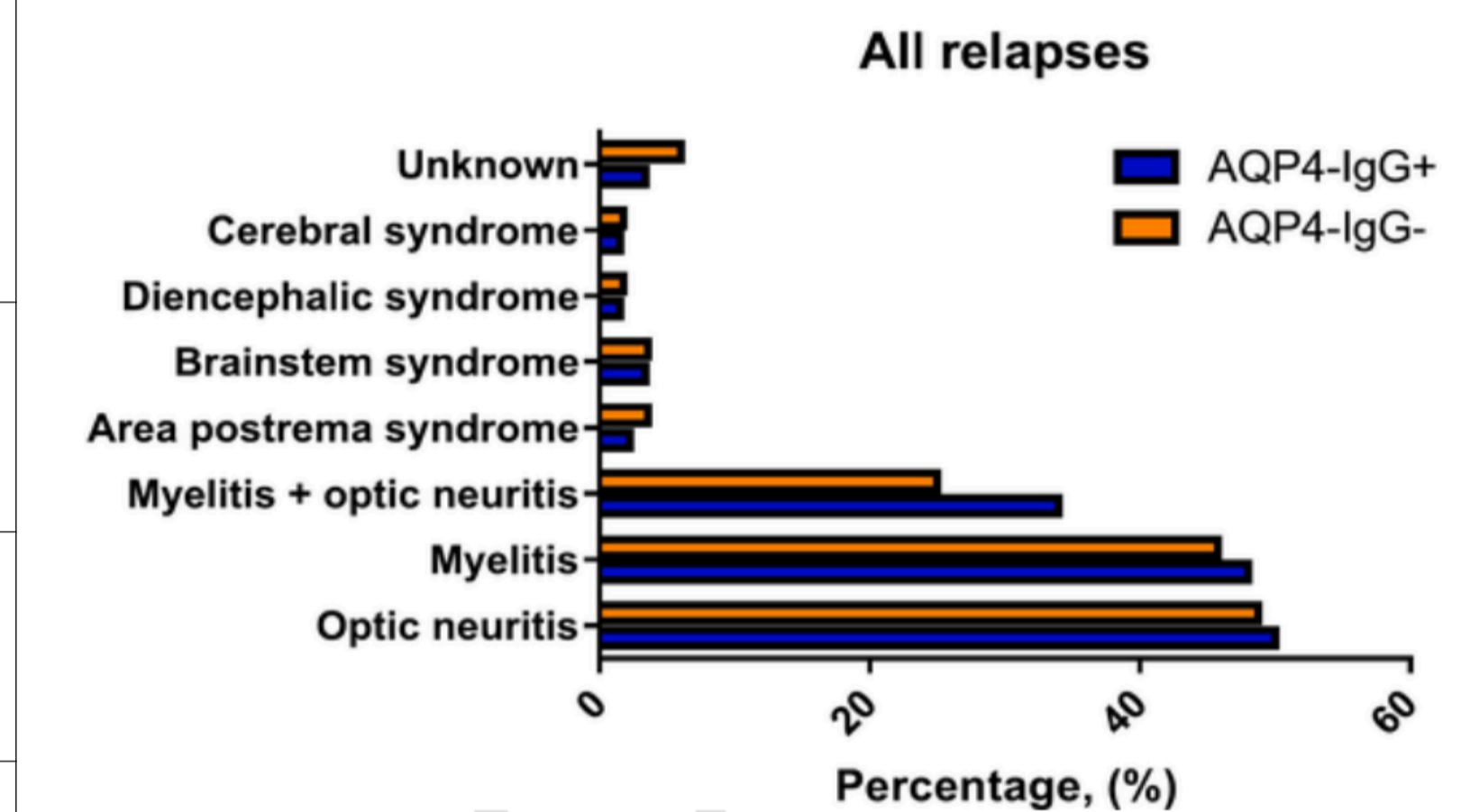


table 3 . Predictors of complete remission in NMOSD (positive and negative) patients from relapses

	P	OR	95%CI
<b>Age at disease onset</b>	<b>&lt;0.001</b>	<b>3.54</b>	<b>2.45-5.01</b>
<b>Female</b>	0.45	0.45	0.45-1.56
<b>Symptom at onset</b>	0.34	0.14	0.56-1.45
<b>Time from onset of relapse to start of treatment (days)</b>	<b>0.004</b>	<b>1.56</b>	<b>1.22-2.13</b>
<b>First line treatment for relapse (PLEX vs. IVMP)</b>	0.08	1.17	0.96-1.67

## CONCLUSION

In Argentina, plasmapheresis is not commonly used to treat NMOSD relapses. Approximately two-thirds of patients experienced complete recovery, and younger age and a short delay to start treatment were independent predictors of a “good” response.

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