



UNICAMP

COMPARATIVE NEURO-OPHTHALMOLOGICAL EVALUATION OF AQP4+ AND AQP4-NMOSD PATIENTS.



UNICAMP

Autor: Francisco Saulo Sampaio Cardoso Tavares;

Co-Autores: Alfredo Damasceno, José Paulo Cabral Vasconcellos, Ana Carolina Amaide Andrade

Neurology Clinic, Department of Neurology, Faculty of Medical Sciences,
State University of Campinas (UNICAMP), Campinas, Brazil

Introduction:

Neuromyelitis optica (NMO) is an inflammatory disease of the central nervous system characterized by attacks of optic neuritis and longitudinally extensive transverse myelitis. After the discovery of antibodies against aquaporin 4 (AQP4-IgG), it was recognized that the clinical presentation could be more diverse, and the term NMO was expanded to neuromyelitis optica spectrum disorders (NMOSD). According to the 2015 international diagnostic criteria (IPND), a proportion of patients may be seronegative for the AQP4-IgG antibody. However, it is still uncertain whether this group of patients represents a distinct entity.

Objective:

To compare the characteristics of the neuro-ophthalmological examination of patients with NMOSD with and without seropositivity for anti-AQP4 antibodies.

Methods:

Our study included patients over 18 years of age diagnosed with NMOSD and for whom serology results were available, evaluated between 2013 and 2017 at the neurology department of Hospital de Clínicas da Unicamp, Campinas/SP. Neuro-ophthalmological examination data were collected prospectively and compared in patients with and without seropositivity for anti-AQP4 antibodies.

Results:

The preliminary sample included 14 patients (11 anti-AQP+ patients and 3 anti-AQP- patients) with NMOSD. The mean age at onset was 35.5 years among seropositive patients and 36 years among seronegative patients. In both groups, the prevalence of women was higher (73% among seropositive patients and 67% among seronegative patients). Optic neuritis was present in 64% of anti-AQP+ patients and in 67% of anti-AQP- patients. Visual acuity (VA) was more severely affected among seropositive patients (71% with $VA \leq 20/400$, while 100% with $VA \geq 20/25$ in anti-AQP- patients).

Conclusions:

AQP4-Ab seropositivity in patients with NMO/NMOSD may be related to specific clinical features. In our preliminary results, we found a significant difference in the severity of visual impairment. However, neuro-ophthalmological examination findings should be studied in greater detail in larger populations.

References:

- Sotirchos ES, Filippatou A, Fitzgerald KC, Salama S, Pardo S, Wang J, Ogbuokiri E, Cowley NJ, Pellegrini N, Murphy OC, Mealy MA, Prince JL, Levy M, Calabresi PA, Saidha S. Aquaporin-4 IgG seropositivity is associated with worse visual outcomes after optic neuritis than MOG-IgG seropositivity and multiple sclerosis, independent of macular ganglion cell layer thinning. *Mult Scler*. 2020 Oct;26(11):1360-1371.
- Ambasta A, Kusumesh R, Sharma J, Sinha BP, Shree S, Gupta A, Priyadarshi RN. Clinico-epidemiologic characteristics of optic neuritis in a tertiary eye centre in Eastern India based on the status of serum aquaporin-4 antibody. *Indian J Ophthalmol*. 2022 Feb;70(2):490-496.
- Fragoso DC, Salles LMOP, Pereira SLA, Callegaro D, Sato DK, Rimkus CM. AQP4-IgG NMOSD, MOGAD, and double-seronegative NMOSD: is it possible to depict the antibody subtype using magnetic resonance imaging? *Arq Neuropsiquiatr*. 2023 Jun;81(6):533-543. doi: 10.1055/s-0043-1768669.