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The use of immunoglobulin (Ig) in MOG antibody disease

MOGAD

This is a packet of information about the use of immunoglobulin in MOG antibody disease. It includes background information, as well as a template letter you may ask your physician to customize to advocate for insurance coverage for immunoglobulin for MOG antibody disease. Please note, SRNA cannot sign letters of medical necessity nor provide medical advice. The template letter provided here should only be used by physicians with expertise in MOGAD who have determined that immunoglobulin is the best course of treatment for you. There are several other treatments used in MOGAD, and treatment should be determined through a conversation with a trained health care provider. For additional information about other treatments used, please visit our website.

To access the digital resource, please visit srna.ngo/ig-mogad

MOG antibody disease (MOGAD) is a recently coined neuro-inflammatory condition carved out of the neuromyelitis optica spectrum disorders (NMOSD, ICD10 = G36.0) that preferentially causes inflammation in the optic nerve but can also cause inflammation in the spinal cord and brain. Myelin oligodendrocyte glycoprotein (MOG) is a protein that is located on the surface of myelin sheaths in the central nervous system.[1,2] While the function of this glycoprotein is not exactly known, MOG is a target of the immune system in this disease.[3] The diagnosis is confirmed by the presence of a serological antibody to MOG (myelin oligodendrocyte glycoprotein) in patients who have repeated inflammatory attacks of the central nervous system.[4]

Similar to NMOSD, patients with MOG antibody disease present with recurrent events of demyelination largely restricted to the optic nerves and spinal cord. However, patients with the MOG antibody have a disease course more comparable to acute disseminated encephalomyelitis (ADEM) and respond better to treatments used for ADEM.

The diagnosis of MOG antibody disease is made when a patient presents with MRI evidence of demyelination in the context of a positive MOG antibody test. MOG antibody disease is relatively rare with a prevalence of only 1 per 500,000 people, compared to NMOSD at 1 per 100,000 and multiple sclerosis (MS) at 1 per 1,000.

Unlike NMOSD and MS, patients with ADEM and MOG antibody disease respond well to immunoglobulin therapy (IVIG/SCIG). The rationale for using Ig in MOG antibody disease is based on evidence for its benefit in ADEM. More recently, studies have confirmed that Ig is beneficial for preventing relapses in MOG antibody disease. individuals with AFM. However, they are not recommendations or official guidelines.

The studies that support its use are:

- Hacohen Y, Wong YY, Lechner C, Jurynczyk M, Wright S, Konuskan B, Kalser J, Poulat AL, Maurey H, Ganelin-Cohen E, Wassmer E, Hemingway C, Forsyth R, Hennes EM, Leite MI, Ciccarelli O, Anlar B, Hintzen R, Marignier R, Palace J, Baumann M, Rostásy K, Neuteboom R, Deiva K, Lim M. Disease course and treatment responses in children with relapsing myelin oligodendrocyte glycoprotein antibody-associated disease. JAMA Neurol. 2018 Apr 1;75(4):478-487. doi: 10.1001/jamaneurol.2017.4601.
- Wong YY, Hacohen Y, Armangue T, Wassmer E, Verhelst H, Hemingway C, van Pelt ED Catsman-Berrevoets CE, Hintzen RQ, Deiva K, Lim MJ, Rostásy K, Neuteboom RF. Paediatric acute disseminated encephalomyelitis followed by optic neuritis: disease course, treatment response and outcome.
- Ramanathan S, Mohammad S, Tantsis E, Nguyen TK, Merheb V, Fung VSC, White OB, Broadley S, Lechner-Scott J, Vucic S, Henderson APD, Barnett MH, Reddel SW, Brilot F, Dale RC; Australasian and New Zealand MOG Study Group. Clinical course, therapeutic responses and outcomes in relapsing MOG antibody-associated demyelination. J Neurol Neurosurg Psychiatry. 2018 Feb;89(2):127-137. doi: 10.1136/jnnp-2017-316880. Epub 2017 Nov 15.
- Thulasirajah S, Pohl D, Davila-Acosta J, Venkateswaran S. Myelin oligodendrocyte glycoprotein-associated pediatric central nervous system demyelination: clinical course, neuroimaging findings, and response to therapy. neuropediatrics. 2016 Aug;47(4):245-52. doi: 10.1055/s-0036-1583184. Epub 2016 Apr 29.

Additional Resources and Support Materials for Individuals Diagnosed with MOGAD

- What is MOG Antibody Disease (MOGAD)?
- Newly Diagnosed with a Rare Neuroimmune Disorder: What You Need to Know
- Long-term Treatments for Preventing Relapses
- MOG Antibody Disease: Adult and Pediatric Presentations
- Pediatric MOG Antibody Disease and ADEM
- MOG Antibody Disease Fact Sheet for Educators

Template Letter

- To download the template letter, please visit srna.ngo/mog-tl.
- Letters should be from your treating health care provider and on their letterhead.
- Your health care provider may include the background information below about MOGAD and immunoglobulin as part of their letter.
- The letter should be signed by your healthcare provider.

References

(1) Fan S, Xu Y, Ren H, et al. Comparison of myelin oligodendrocyte glycoprotein (MOG)-antibody disease and AQP4-IgG-positive neuromyelitis optica spectrum disorder (NMOSD) when they co-exist with anti-NMDA (N-methyl-D-aspartate) receptor encephalitis. Mult Scler Relat Disord. 2018 Feb;20:144-152. doi: 10.1016/j.msard.2018.01.007. Epub 2018 Jan 31.

(2) Kezuka T, Ishikawa H. Diagnosis and treatment of anti-myelin oligodendrocyte glycoprotein antibody positive optic neuritis. Jpn J Ophthalmol. 2018 Mar;62(2):101-108. doi: 10.1007/s10384-018-0561-1. Epub 2018 Feb 14.

(3) Dos Passos GR, Oliveira LM, da Costa BK, et al. MOG-IgG-associated optic neuritis, encephalitis, and myelitis: lessons learned from neuromyelitis optica spectrum disorder. Front Neurol. 2018 Apr 4;9:217. doi: 10.3389/fneur.2018.00217. eCollection 2018.

(4) Weber MS, Derfuss T, Metz I, Brück W. Defining distinct features of anti-MOG antibody associated central nervous system demyelination. Ther Adv Neurol Disord. 2018 Mar 29;11:1756286418762083. doi: 10.1177/1756286418762083. eCollection 2018.