



MASSACHUSETTS
GENERAL HOSPITAL

NEUROLOGY



HARVARD
MEDICAL SCHOOL

Living with ADEM, AFM, MOGAD, NMOSD, ON and TM

Michael Levy, MD, PhD

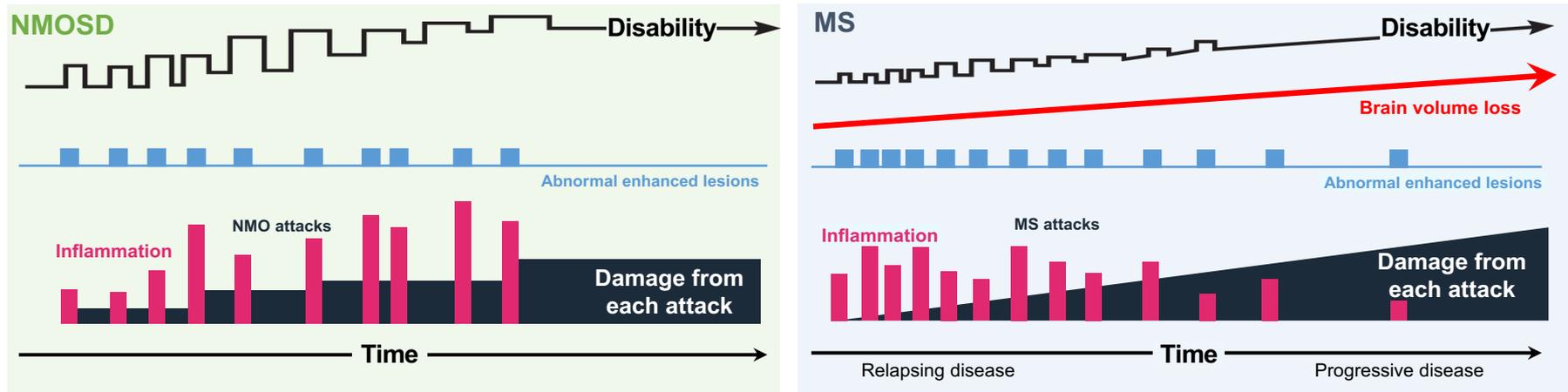
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Neurodegeneration and Disability in NMOSD is Largely Relapse-Dependent

Schematic depiction of a typical disease course for NMOSD and MS¹

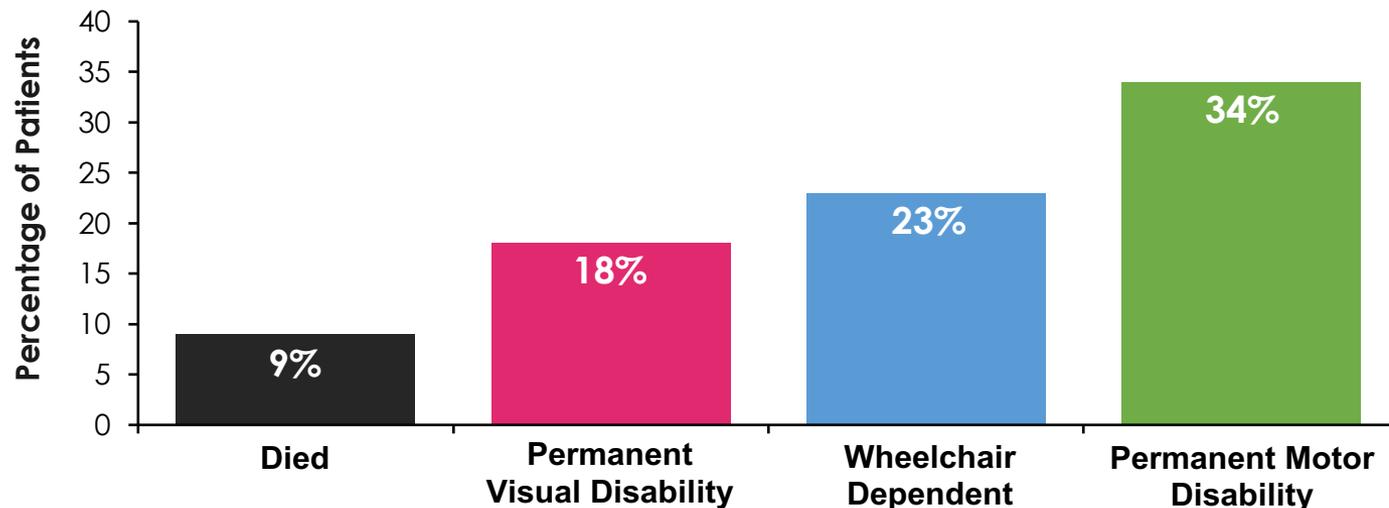


Disability in NMOSD is predominantly attack-related, in contrast with MS where most disability accrues in the progressive phase of the illness^{2,3}

1. Kawachi I, Lassmann H. *J Neurol Neurosurg Psychiatry*. 2017;88(2):137-145. 2. Pittock SJ, Lucchinetti CF. *Ann N Y Acad Sci*. 2016;1366(1):20-39. 3. Ganesh A. *Neurol Clin Pract*. 2017;7(2):170-178

Disability and Death Risk Resulting from Recurrent Attacks

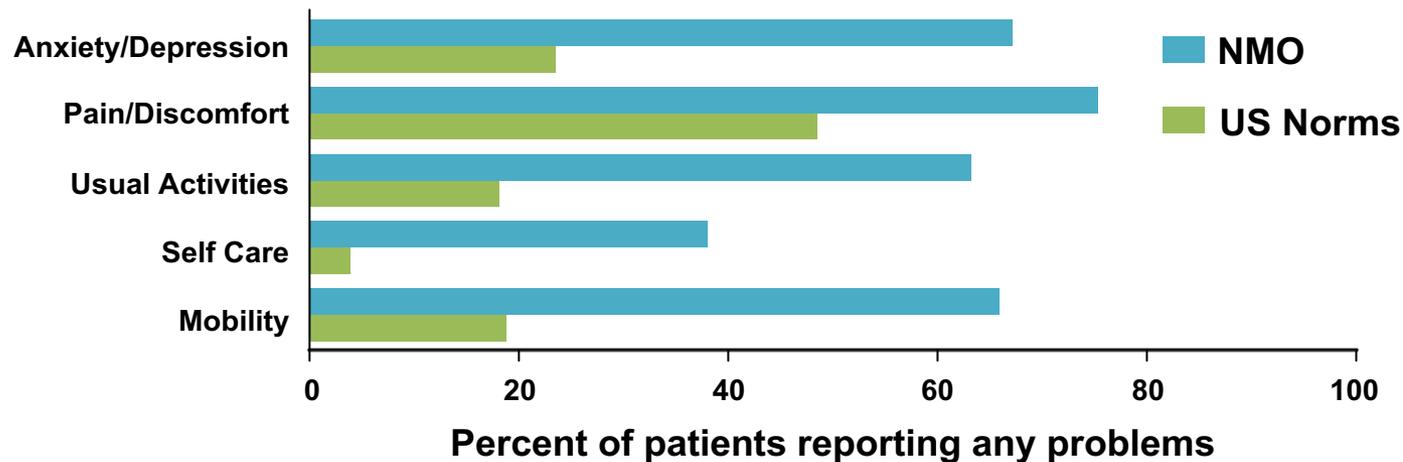
Disability And Mortality In 106 AQP4 Antibody-Positive NMOSD Patients With a Mean Disease Duration of 75 Months^a



^a Data is from a retrospective cohort study of patients (N=106) with NMO/NMOSD (all AQP4-antibody positive) and is based on a 4-year review of medical records from 3 tertiary centers in the UK and Japan.
Kitley J, et al. *Brain*. 2012;135(pt 6):1834-1849.

NMOSD Significantly Impacts HRQoL

In a study of 21 patients with NMOSD who completed the EQ-5D-5L questionnaire on health status, the majority reported at least some problems with mobility (66.7%), usual activities (61.9%), pain/discomfort (76.2%), and/or anxiety/depression (71.4%)



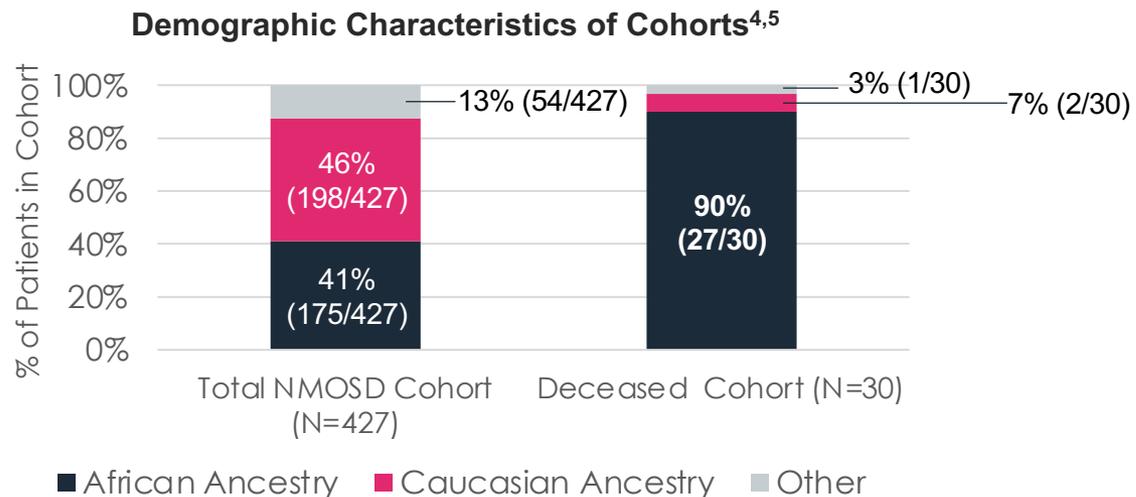
^aBased on a study of patients from the Johns Hopkins NMO Clinic and the John Hopkins Hospital who met the 2015 IPND criteria.

EQ-5D-5L, 5-Level EuroQol 5 dimensions; QoL; quality of life.

Mealy MA, et al. *Int J MS Care*. In press. doi:10.7224/1537-2073.2017-076.

Mortality Rates in Patients With NMOSD

Mortality rates in patients with NMOSD were 22.5%-25% in older studies (1950-2007) and have fallen to 7%-13% (post 2012)¹⁻⁴

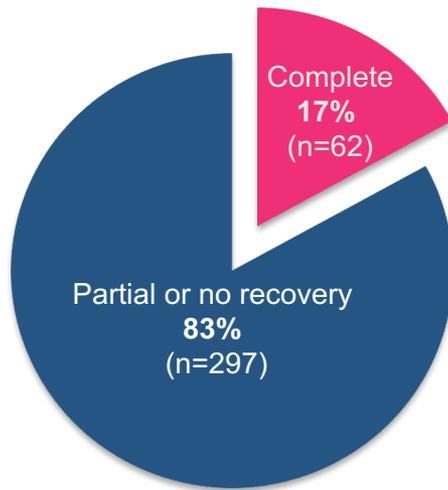


Mortality In NMOSD is strongly associated with African ancestry^{5,6}

1. Wingerchuk D, et al. *Neurology*. 2003;60(5):848-853. 2. Cabre P, et al. *J Neurol Neurosurg Psychiatry*. 2009;80(10):1162-4. 3. Collongues N, et al. *Mult Scler J*. 2014;20(8):1086-1094. 4. Mealy MA, et al. *Neurol Neuroimmunol Neuroinflamm*. 2018;5:e468. 5. Mealy MA, et al. *Arch Neurol*. 2012;69(9):1176-1180.

Complete Recovery From Relapses is Rare in NMOSD

Outcome after myelitis



Outcome after optic neuritis

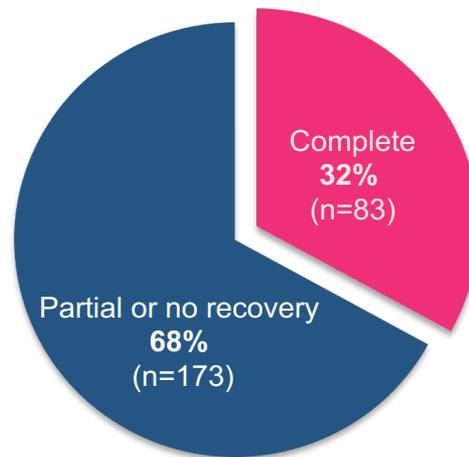


Figure modified according to Jarius S, et al. *J Neuroinflammation*. 2012;9:14.

Overall, 49% of patients experienced a relapse within 1 year of disease onset and 70% within 2 years²

1. Jarius S, et al. *J Neuroinflammation*. 2012;9:14. 2. Kitley J, et al. *Brain* 2012;135(Pt 6):1834-1849.