NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Inebilizumab for treating AQP4-IgG-seropositive neuromyelitis optica spectrum disorders ID6430

Draft scope

Draft remit/evaluation objective

To appraise the clinical and cost effectiveness of inebilizumab within its marketing authorisation for treating AQP4-IgG-seropositive neuromyelitis optica spectrum disorders.

Background

Neuromyelitis optica spectrum disorder (NMOSD) is a rare autoimmune disease where the immune system attacks the nerves in the eyes, central nervous system and sometimes also the brain. This can lead to optic neuritis, where the optic nerve becomes inflamed, and transverse myelitis, where the spinal cord becomes inflamed. Optic neuritis can affect one or both eyes with symptoms including pain on moving the eye and acute loss of vision. Symptoms of transverse myelitis depend on the area of the spine where swelling occurs and include, muscle spasms and weakness leading to back pain, leg pain and bladder or bowel dysfunction. The muscle weakness can range from a mild 'heavy' feeling in one limb, to complete paralysis in all four limbs. NMOSD can be a single event but is relapsing in most cases. Relapsing attacks are separated by months or years, but in rare cases they can be almost continuous. Each relapse can result in cumulative, permanent neurological impariment and disability. NMOSD is associated with high mortality and morbidity when not diagnosed early and treated. Without treatment, within 5 years of their first attack approximately 50% of people with NMOSD will be wheelchair users and blind, and a third will have died. Relapses usually lead to permanent neurologic impairment if not treated effectively. While early diagnosis and treatment can improve outcomes, some people are refractory to current treatments and experience severe long-term disability.

About 1,000 people in England have neuromyelitis optica spectrum disorder and approximately 73% to 90% of these people have aquaporin-4 (AQP4) antibodies.[1,2] This is supported by a prevalance study which suggests that there are 672 people in England with AQP4 antibody-positive NMOSD.[3] Incidence is higher in females with a ratio of 9 females to 1 male affected.[4] It also disproportionately affects people of Black and Asian ethnicity.

There is no cure for NMOSD so management focusses on treating acute attacks, preventing relapses and treating the residual symptoms of the condition. Acute episodes are treated with steroids. If symptoms do not respond to steroids, plasma exchange or immunoglobulins can be used. Maintenance treatment to prevent further episodes of NMOSD includes azathioprine or mycophenylate mofetil. A low dose of steroids may also be required for maintenance. If relapse occurs, rituximab may be given.[5]

The technology

Inebilizumab (uplizna, Amgen) has a marketing authorisation in the UK for treating neuromyelitis optica spectrum disorders which are anti-aquaporin-4 immunoglobulin G-seropositive.

Intervention(s)	Inebilizumab
Population(s)	People with aquaporin-4 immunoglobulin G -seropositive neuromyelitis optica spectrum disorders (NMOSD)
Comparators	Established clinical management without inebilizumab
Outcomes	The outcome measures to be considered include: • time to onset of an NMO/NMOSD attack • relapse rate • ambulatory function • visual acuity (the affected eye) • visual acuity (both eyes) • pain • bowel and bladder incontinence • NMO/NMOSD-related inpatient hospitalisations • adverse effects of treatment • health-related quality of life.

Economic analysis	The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year. The reference case stipulates that the time horizon for estimating clinical and cost effectiveness should be sufficiently long to reflect any differences in costs or outcomes between the technologies being compared. Costs will be considered from an NHS and Personal Social Services perspective. If the use of inebilizumab is conditional on the presence of aquaporin-4 antibodies. The economic modelling should include the costs associated with diagnostic testing for aquaporin-4 antibodies in people with neuromyelitis optica spectrum disorder who would not otherwise have been tested. A sensitivity analysis should be provided without the cost of the diagnostic test. See section 4.8 of the guidance development manual (available here: https://www.nice.org.uk/process/pmg36/chapter/introduction-to-health-technology-evaluation) The cost effectiveness analysis should include consideration of the benefit in the best and worst seeing eye.
Other considerations	Guidance will only be issued in accordance with the marketing authorisation. Where the wording of the therapeutic indication does not include specific treatment combinations, guidance will be issued only in the context of the evidence that has underpinned the marketing authorisation granted by the regulator.
Related NICE recommendations	None

Questions for consultation

Where do you consider inebilizumab will fit into the existing care pathway for NMOSD? Would it only be used to prevent relapse rather than being used as both a treatment during an attack and to prevent relapse?

What is established clinical management for NMO/NMOSD? Are particular immunosupressants used preferentially? Are any treatments used in combination? Does the treatment differ if a person has optic neuritis or transverse myelitis, or both?Please select from the following, will inebilizumab be:

A. Prescribed in primary care with routine follow-up in primary care
B. Prescribed in secondary care with routine follow-up in primary care
C. Prescribed in secondary care with routine follow-up in secondary care
D. Other (please give details):

For comparators and subsequent treatments, please detail if the setting for prescribing and routine follow-up differs from the intervention.

Would inebilizumab be a candidate for managed access?

Do you consider that the use of inebilizumab can result in any potential substantial health-related benefits that are unlikely to be included in the QALY calculation?

Please identify the nature of the data which you understand to be available to enable the committee to take account of these benefits.

NICE is committed to promoting equality of opportunity, eliminating unlawful discrimination and fostering good relations between people with particular protected characteristics and others. Please let us know if you think that the proposed remit and scope may need changing in order to meet these aims. In particular, please tell us if the proposed remit and scope:

- could exclude from full consideration any people protected by the equality legislation who fall within the patient population for which inebilizumab is licensed;
- could lead to recommendations that have a different impact on people protected by the equality legislation than on the wider population, e.g. by making it more difficult in practice for a specific group to access the technology;
- could have any adverse impact on people with a particular disability or disabilities.

Please tell us what evidence should be obtained to enable the committee to identify and consider such impacts.

NICE intends to evaluate this technology through its Single Technology Appraisal process. (Information on NICE's health technology evaluation processes is available at https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-technology-appraisal-guidance/changes-to-health-technology-evaluation).

References

1. Hamid SH, Elsone L, Mutch K, Solomon T, Jacob A. The impact of 2015 neuromyelitis optica spectrum disorders criteria on diagnostic rates. Mult Scler. 2017;23(2):228–233.
2. Hyun JW, Jeong IH, Joung A, Kim SH, Kim HJ. Evaluation of the 2015 diagnostic criteria for neuromyelitis optica spectrum disorder. Neurology. 2016;86(19):1772–1779.
3. O'Connell, K., Hamilton-Shield, A., Woodhall, M., Messina, S., Mariano, R., Waters, P., Ramdas, S., Leite, M.I. and Palace, J., 2020. Prevalence and incidence of neuromyelitis optica spectrum disorder, aquaporin-4 antibody-positive NMOSD and MOG antibody-positive disease in Oxfordshire, UK. Journal of Neurology, Neurosurgery & Psychiatry, 91(10), pp.1126-1128.
4. Gold SM, Willing A, Leypoldt F, Paul F, Friese MA. Sex differences in autoimmune disorders of the central nervous system. Semin Immunopathol. (2019) 41:177–88. doi: 10.1007/s00281-018-0723-8
5. Great Ormond Streat Hospital for Children: Neuromyelitis optica spectrum disorder. Accessed October 2025