NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Fosdenopterin for treating molybdenum cofactor deficiency type A

Draft scope

Draft remit/evaluation objective

To appraise the clinical and cost effectiveness of fosdenopterin within its marketing authorisation for treating molybdenum cofactor deficiency type A.

Background

Molybdenum cofactor deficiency (MoCD) type A is a rare genetic disease that can appear shortly after birth characterised by brain dysfunction that worsens over time. It is caused by defects in a gene called MOCS1. The proteins produced by the MOCS1 gene are involved in the formation of a molecule called molybdenum cofactor, which is essential to the function of several enzymes. Without molybdenum cofactor, an enzyme called sulfite oxidase does not function properly, and toxic levels of sulfite and S-sulfocysteine build up in the body, and in particular a child's developing brain. The build-up of these compounds leads to seizures, severe brain abnormalities, and other features of MoCD type A.

The prevalence of MoCD is estimated to be approximately less than 1 in 100,000 or 200,000 worldwide. In European Union, for MoCD type A only 53 cases have been reported leading to an estimated prevalence of 0.005 per 10,000[1].

There are currently no licensed targeted treatments for MoCD type A. Standard management of people with MoCD type A aims to provide symptomatic relief from clinical manifestations of MoCD type A and provide palliative care. Thiamine and magnesium supplementation is used to treat people with deficiencies. Standard treatment for the prevention of migraine, seizures, developmental delay, spasticity/dystonia, and ectopia lentis. Feeding therapy and a gastrostomy tube are considered in people where there are concerns about aspiration and /or persistent feeding issues.

The technology

Fosdenopterin (Nulibry, Sentynl Therapeutics) does not currently have a marketing authorisation in the UK for treating MoCD type A. It has been studied in clinical trials of people with MoCD type A.

Intervention(s)	Fosdenopterin
Population(s)	People with molybdenum cofactor deficiency type A
Comparators	• Established clinical management without fosdenopterin

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Outcomes	The outcome measures to be considered include: • overall survival • cognitive function • gross motor function • adverse effects of treatment • body weight and nutritional parameters (including growth and development) • neurological development parameters • frequency of seizures • mortality • severity of disease • health-related quality of life (for patients and carers).
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. The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account.
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**
Related National Policy	The NHS Long Term Plan, 2019. NHS Long Term Plan NHS England (2018/2019) NHS manual for prescribed specialist services (2018/2019)

Questions for consultation

How many people have MoCD type A in England, and how many would be offered fosdenopterin?

Where do you consider fosdenopterin will fit into the existing care pathway for MoCD type A?

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Which treatments are considered to be established clinical practice in the NHS for treating MoCD type A?

How effective are the current treatments for the management of MoCD type A?

How should best supportive care be defined?

Are the tests to establish the correct diagnosis of MoCD Type A standard practice in the NHS?

Is there any data/evidence available on how long people live with MoCD type A /the impact of MoCD type A on quality of life?

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

What is the impact of living with MoCD type A when treated with standard care or fosdenopterin for patients and carers?

Are the outcomes listed appropriate? Are there any other outcomes that should be included in the scope? 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 fosdenopterin will be 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 Highly Specialised Technologies Evaluation Programme. We welcome comments on the appropriateness of evaluating this topic through this process. (Information on NICE's health technology evaluation processes is available at: https://www.nice.org.uk/process/pmg36/chapter/introduction-to-health-technology-evaluation).

References

1. European medicines agency. Assessment report. 2022. Accessed June 2023.

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