**NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE**

**Health Technology Evaluation**

# Mavorixafor for treating WHIM syndrome ID3946

**Draft scope**

## Draft remit/evaluation objective

To appraise the clinical and cost effectiveness of mavorixafor within its marketing authorisation for treating WHIM syndrome.

## Background

WHIM syndrome is a very rare genetic immunodeficiency syndrome. WHIM is an acronym for some of the characteristic symptoms of the disorder (warts, hypogammaglobulinemia, infections and myelokathexis). In most cases, WHIM syndrome is caused by variants in the *CXCR4* gene, which codes for a type of protein called a chemokine receptor.[1] In WHIM syndrome, the increased activity of CXCR4 prevents mature neutrophils from leaving the bone marrow and entering the bloodstream (myelokathexis), and B cell dysfunction, leading to low immunoglobulin levels (hypogammaglobulinemia).[1] While symptoms of WHIM syndrome can vary greatly from one individual to another, the reduction in immune system activity can lead to recurrent and potentially life-threatening infections.[2] Infection with HPV may lead to the development of warts, a characteristic symptom of WHIM syndrome. Infection with HPV is also linked to several kinds of cancer.[3]

WHIM syndrome's exact prevalence or incidence is unknown, although, it has been estimated at around 0.2/million live births.[2] Approximately 180 cases have been reported worldwide in the medical literature.[2] The onset of WHIM syndrome is usually in infancy or early childhood, with males and females affected in equal numbers.

There are currently no licensed treatments for WHIM syndrome. Management is often multidisciplinary, including a paediatrician (when the patient is a child), immunologist, haematologist, dermatologist and other healthcare professionals. Current treatment may include injection of granulocyte colony-stimulating factor (G-CSF) or granulocyte–macrophage colony-stimulating factor (GM-CSF), hematopoietic stem cell transplantation (HSCT), *CXCR4* antagonists (such as plerixafor), and gene editing.[4] Management of WHIM syndrome may also include prophylactic interventions including HPV vaccination and prophylactic antibiotics.

## The technology

Mavorixafor (xolremdi, Norgine Pharmaceuticals) does not currently have a marketing authorisation in the UK for treating WHIM syndrome. It has been studied in a clinical trial compared with placebo in people with WHIM syndrome showing mutation of the *CXCR4* gene.

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| **Intervention(s)** | Mavorixafor |
| **Population(s)** | People with WHIM syndrome |

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| **Comparators** | Standard care for WHIM syndrome without mavorixafor, including but not limited to:<br>• granulocyte colony-stimulating factor (G-CSF)<br>• granulocyte–macrophage colony-stimulating factor (GM-CSF)<br>• hematopoietic stem cell transplantation (HSCT)<br>• plerixafor<br>• *CXCR4*-specific nanobodies |
| **Outcomes** | The outcome measures to be considered include:<br>• neutrophil count<br>• lymphocyte count<br>• number of infections<br>• number of warts<br>• hospital admissions<br>• mortality<br>• adverse effects of treatment<br>• 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.<br>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.<br>Costs will be considered from an NHS and Personal Social Services perspective. |
| **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**

What is the current standard of care for WHIM syndrome in the NHS?

Are the current comparators a suitable description of treatments available for people with WHIM syndrome in the NHS?

Is HSCT used in the NHS as a treatment for WHIM syndrome?

Is plerixafor used in the NHS as a treatment for WHIM syndrome?

Where do you consider mavorixafor will fit into the existing care pathway for WHIM syndrome?

Would HST routing be suitable for this topic?

Please select from the following, will mavorixafor 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 mavorixafor be a candidate for managed access?

Do you consider that the use of mavorixafor 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.

Please indicate if any of the treatments in the scope are used in NHS practice differently than advised in their Summary of Product Characteristics. For example, if the dose or dosing schedule for a treatment is different in clinical practice. If so, please indicate the reasons for different usage of the treatment(s) in NHS practice. If stakeholders consider this a relevant issue, please provide references for data on the efficacy of any treatments in the pathway used differently than advised in the Summary of Product Characteristics.

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 mavorixafor 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 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. Immune deficiency foundation. WHIM syndrome. Accessed June 2026
2. National Organization for Rare Disorders. WHIM Syndrome (2024). Accessed June 2026
3. National Cancer Institute. HPV and cancer (2025). Accessed July 2026
4. Khan MS et al. (2025). Unveiling WHIM syndrome: Mavorixafor's emerging role in immune restoration and therapy. *Clinical and Experimental Immunology*. 219(1) uxaf014