

NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health Technology Evaluation

Pembrolizumab with pemetrexed and platinum-based chemotherapy for untreated unresectable advanced malignant pleural mesothelioma [ID4044]

Final scope

Remit/evaluation objective

To appraise the clinical and cost effectiveness of pembrolizumab with pemetrexed and platinum-based chemotherapy within its marketing authorisation for untreated unresectable advanced malignant pleural mesothelioma.

Background

Malignant pleural mesothelioma is a cancer affecting the membranes lining the outer surface of the lungs and the inside of the chest wall (the pleura). It is a highly aggressive tumour; the majority of people with this condition present and are diagnosed in the advanced stages of the disease and most have a poor prognosis. Pleural mesothelioma can be divided into 3 histologic subtypes, epithelioid, sarcomatoid and a combination of epithelioid and sarcomatoid known as biphasic.

Malignant pleural mesothelioma accounts for approximately 96% of all mesothelioma diagnoses.¹ Most cases are linked to exposure to asbestos in the workplace. People typically present with the condition 20 to 50 years after exposure, and over half of all diagnoses are in people aged 75 and older.¹ Between 2016 and 2018 approximately 6,950 people were diagnosed with pleural mesothelioma in UK (approximately 2,300 per year) and 83% of diagnoses were in men.¹

The aim of treatment is to prolong life expectancy, reduce tumour size and improve symptoms. NICE technology appraisal guidance 818 (2022) recommends [nivolumab with ipilimumab](#) as an option in adults with untreated unresectable malignant pleural mesothelioma if they have an Eastern Cooperative Oncology Group (ECOG) performance status of 0 or 1. NICE technology appraisal guidance 135 (2008) recommends [pemetrexed with cisplatin](#) as a treatment option for people with untreated malignant pleural mesothelioma for whom surgical resection is inappropriate. For people who are not fit enough to receive chemotherapy, best supportive care is used to control disease symptoms.

The technology

Pembrolizumab (Keytruda, Merck Sharp and Dohme) with pemetrexed and platinum-based chemotherapy does not currently have a marketing authorisation in the UK for untreated unresectable advanced malignant pleural mesothelioma. It has been studied in a phase II/III clinical trial in which pembrolizumab with pemetrexed and cisplatin was compared with two treatments (pembrolizumab alone, and pemetrexed with cisplatin) in people with unresectable advanced and or metastatic malignant pleural mesothelioma.

Intervention(s)	Pembrolizumab with pemetrexed and platinum-based chemotherapy
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Population(s)	Adults with untreated unresectable advanced malignant pleural mesothelioma
Subgroups	<p>If the evidence allows the following subgroups will be considered:</p> <ul style="list-style-type: none"> • histologic subtype (epithelioid, sarcomatoid, biphasic) • level of programmed death-ligand 1 (PD-L1) expression • Eastern Cooperative Oncology Group performance status.
Comparators	<ul style="list-style-type: none"> • Nivolumab with ipilimumab • Pemetrexed with cisplatin • Pemetrexed with carboplatin (for people for whom treatment with cisplatin is unsuitable)
Outcomes	<p>The outcome measures to be considered include:</p> <ul style="list-style-type: none"> • overall survival • progression-free survival • response rates • adverse effects of treatment • health-related quality of life.
Economic analysis	<p>The reference case stipulates that the cost effectiveness of treatments should be expressed in terms of incremental cost per quality-adjusted life year.</p> <p>If the technology is likely to provide similar or greater health benefits at similar or lower cost than technologies recommended in published NICE technology appraisal guidance for the same indication, a cost comparison may be carried out.</p> <p>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.</p> <p>Costs will be considered from an NHS and Personal Social Services perspective.</p> <p>The availability and cost of biosimilar and generic products should be taken into account.</p> <p>The availability of any commercial arrangements for the intervention, comparator and subsequent treatment technologies will be taken into account.</p>

<p>Other considerations</p>	<p>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.</p>
<p>Related NICE recommendations</p>	<p>Related technology appraisals:</p> <p>Nivolumab with ipilimumab for untreated unresectable malignant pleural mesothelioma (2022) NICE technology appraisal guidance 818.</p> <p>Pemetrexed for the treatment of malignant pleural mesothelioma (2008) NICE technology appraisal guidance 135.</p> <p>Related technology appraisals in development:</p> <p>Pegarginase with pemetrexed and cisplatin for untreated advanced malignant pleural mesothelioma. NICE technology appraisal guidance [ID1575]. Publication date to be confirmed.</p>
<p>Related National Policy</p>	<p>The NHS Long Term Plan (2019) NHS Long Term Plan</p> <p>Department of Health and Social Care, NHS Outcomes Framework 2016-2017 (published 2016): Domain 1. https://www.gov.uk/government/publications/nhs-outcomes-framework-2016-to-2017</p> <p>NHS England (2013) 2013/14 NHS Standard contract for cancer: malignant mesothelioma (adult) Ref: B10/S/a</p> <p>NHS England (2023) Prescribed specialist services manual. Chapter 105</p> <p>NHS England (2022) Specialised Services Quality Dashboard (SSQD) metric definitions for malignant mesothelioma</p>

References

1. Royal College of Physicians (2020). [National Mesothelioma Audit](#).