

Technology Guidance

Biologics for treating atopic dermatitis

Technology Guidance from the MOH Drug Advisory Committee

Guidance Recommendations

The Ministry of Health's Drug Advisory Committee has recommended:

- ✓ Lebrikizumab 250 mg solution for injection in pre-filled pen for treating moderate-to-severe atopic dermatitis in patients who have had an inadequate response, intolerance or contraindication to at least one systemic therapy such as ciclosporin, methotrexate, azathioprine and mycophenolate mofetil.

Funding status

Lebrikizumab 250 mg solution for injection in pre-filled pen is recommended for inclusion on the Medication Assistance Fund (MAF) for the abovementioned indication from 1 December 2026.

Lebrikizumab should be used in line with the additional clinical criteria listed in the Annex.

MAF assistance **does not** apply to any formulations or strengths of dupilumab or nemolizumab for treating atopic dermatitis.

Technology evaluation

- 1.1. At the July 2026 meeting, the MOH Drug Advisory Committee (“the Committee”) considered the evidence presented for the technology evaluation of three biologics (dupilumab, lebrikizumab, and nemolizumab) for treating moderate-to-severe atopic dermatitis. The Agency for Care Effectiveness (ACE) conducted the evaluation in consultation with clinical experts from public healthcare institutions and patient experts from local patient and voluntary organisations. Published clinical and economic evidence for the biologics was considered in line with their registered indications.
- 1.2. The evidence was used to inform the Committee’s deliberations around four core decision-making criteria:
 - Clinical need of patients and nature of the condition;
 - Clinical effectiveness and safety of the technology;
 - Cost effectiveness (value for money) – the incremental benefit and cost of the technology compared to existing alternatives; and
 - Estimated annual technology cost and the number of patients likely to benefit from the technology.
- 1.3. Additional factors, including social and value judgments, may also inform the Committee’s funding considerations.

Clinical need

- 2.1. In local practice, patients with moderate-to-severe atopic dermatitis (AD) and an inadequate response to topical treatments and phototherapy typically require systemic treatments. Oral immunosuppressants subsidised on the Standard Drug List (SDL), such as ciclosporin, methotrexate, azathioprine, and mycophenolate mofetil, are usually considered first. In cases of inadequate response, intolerance or contraindication to these immunosuppressants, patients may require other treatment options such as oral Janus kinase (JAK) inhibitors or injectable biologics.
- 2.2. Currently, abrocitinib (a JAK inhibitor) is subsidised on the Medication Assistance Fund (MAF) for treating moderate-to-severe AD. Three biologics—dupilumab, lebrikizumab and nemolizumab—are approved by the Health Sciences Authority (HSA) but are currently not subsidised for this indication. These biologics target interleukin (IL)-mediated inflammatory pathways implicated in AD, offering an alternative mechanism of action to JAK inhibition. Dupilumab and lebrikizumab inhibit the IL-4 and/or IL-13 signalling axis to reduce skin inflammation and skin barrier dysfunction, whereas nemolizumab inhibits the IL-31 pathway of itch and skin inflammation.

- 2.3. The Committee recalled that, at the October 2023 meeting, dupilumab was reviewed for the treatment of moderate-to-severe AD but not recommended for subsidy due to unacceptable cost effectiveness compared with abrocitinib. Since then, lebrikizumab and nemolizumab have become available for this indication, resulting in reconsideration of biologics for subsidy to broaden treatment options for patients.
- 2.4. The Committee considered 73 testimonials from local patients, carers, and a patient organisation representative describing the impact of moderate-to-severe AD and treatment experiences. The Committee acknowledged the significant physical, emotional and mental health impacts of AD, with intense itching, pain and unpredictable flare-ups affecting exercise, sleep, work and school. Of the 19 respondents who had received the biologics under evaluation, most reported significant improvements in skin condition, with generally minimal and mild side effects. However, treatment cost was a key concern, with respondents seeking affordable treatments that reduce itching, flare frequency, inflammation and rashes, while improving sleep and quality of life for patients and carers.

Clinical effectiveness and safety

- 3.1. Biologics versus placebo
The Committee reviewed clinical evidence for dupilumab, lebrikizumab, and nemolizumab from 10 placebo-controlled trials that included patients with moderate-to-severe AD who were receiving background topical treatment (corticosteroids and/or calcineurin inhibitors).
- 3.2. Results showed that the three biologics were superior to placebo in reducing itch and severity of AD and improving patients' health-related quality of life at week 16. These were demonstrated by outcome measures including the Eczema Area and Severity Index (EASI), Investigator's Global Assessment (IGA), Peak Pruritus Numerical Rating Scale (PP-NRS), and Dermatology Life Quality Index (DLQI).
- 3.3. The Committee noted the adverse events reported across the three biologics were generally mild-to-moderate in severity and rarely led to treatment discontinuation. Dupilumab and lebrikizumab were associated with increased incidence of short-term conjunctivitis and injection-site reactions compared with placebo. For nemolizumab, urticaria was the most frequently reported adverse event, with no observed differences in the incidence of conjunctivitis and injection-site reactions between the nemolizumab and placebo arms.

3.4. Biologics versus one another and abrocitinib

The Committee acknowledged that no head-to-head trials comparing the biologics have been conducted. Among the biologics, only dupilumab has been directly compared with abrocitinib in clinical trials (JADE DARE and JADE COMPARE). Based on its previous review of these trials, the Committee considered dupilumab and abrocitinib to be clinically comparable for treating moderate-to-severe AD.

- 3.5. For lebrikizumab, the Committee noted that NICE (UK) and PBAC (Australia) reviewed indirect treatment comparisons (ITCs) versus dupilumab and/or abrocitinib at week 16. Results suggested that lebrikizumab was comparable to dupilumab and abrocitinib in terms of clinical effectiveness and safety.
- 3.6. For nemolizumab, NICE and PBAC also reviewed ITCs versus dupilumab, lebrikizumab and/or abrocitinib. Based on week-16 results, NICE considered that nemolizumab may work as well as most biologics and JAK inhibitors, although wide credible intervals indicated substantial uncertainty. PBAC considered nemolizumab inferior to dupilumab in clinical effectiveness at week 16, but likely as effective as dupilumab based on week 24 outcomes.
- 3.7. Overall, based on the available evidence, the Committee considered dupilumab and lebrikizumab to be clinically comparable to each other and to abrocitinib. The comparative effectiveness of nemolizumab relative to the other agents remained uncertain, as the 24-week extended induction period evaluated by PBAC has not been approved by HSA and may not be applicable in the Singapore setting.

Cost effectiveness

- 4.1. The Committee agreed that a cost-minimisation approach was appropriate to assess the cost effectiveness of dupilumab and lebrikizumab compared with abrocitinib, given that these treatments are considered clinically comparable. Nemolizumab was excluded from the analysis due to uncertain comparative clinical effectiveness.
- 4.2. The Committee noted that lebrikizumab's treatment cost was comparable to that of abrocitinib, and the company had offered an adequate pricing proposal to manage the uncertainty of the overall budget impact. In contrast, dupilumab was associated with higher treatment costs than both abrocitinib and lebrikizumab, and the company's pricing proposal was inadequate to manage budget uncertainty. Overall, the Committee considered the cost effectiveness of lebrikizumab, but not dupilumab, to be acceptable compared with abrocitinib.

Estimated annual technology cost

- 5.1. The Committee noted that the cost impact to the public healthcare system was estimated to be between SG\$5 million and SG\$10 million in the first year of listing lebrikizumab on the MOH List of Subsidised Drugs for treating moderate-to-severe AD.

Recommendations

- 6.1. Based on available evidence, the Committee recommended lebrikizumab 250 mg solution for injection in pre-filled pen be listed on the MAF for treating moderate-to-severe AD in patients who have had an inadequate response, intolerance or contraindication to at least one systemic therapy such as ciclosporin, methotrexate, azathioprine and mycophenolate mofetil. The decision was based on acceptable clinical and cost effectiveness of lebrikizumab compared with alternative treatments.
- 6.2. The Committee also recommended lebrikizumab be used in line with additional clinical criteria (listed in the Annex) to govern appropriate use in local practice.
- 6.3. The Committee recommended not listing dupilumab and nemolizumab on the MOH list of Subsidised Drugs. The decision was due to the unacceptable pricing proposal and cost effectiveness of dupilumab, and the uncertain clinical and cost effectiveness of nemolizumab, compared with alternative treatments.

ANNEX

MAF clinical criteria for lebrikizumab

Treatment of moderate-to-severe atopic dermatitis (AD)

Additional clinical criteria:

Moderate-to-severe AD (initial – first 16 weeks of treatment)

The patient on initial application:

- has Physicians Global Assessment (PGA) baseline score of 3 or 4 and has Eczema Area and Severity Index (EASI) baseline score of at least 16 despite treatment with at least 1 systemic therapy, such as ciclosporin, methotrexate, azathioprine and mycophenolate mofetil for a duration of at least 12 weeks, unless contraindicated or not tolerated; AND
- has Dermatology Life Quality Index (DLQI) baseline score measured before initiation of lebrikizumab.

Lebrikizumab must not be used in combination with other biologics or systemic JAK inhibitors for treatment of moderate-to-severe AD.

In patients who have not yet achieved an adequate response after 16 weeks of initial treatment, lebrikizumab may be extended by an additional 8 weeks if the treating physician considers that continued treatment is likely to result in an adequate response.

Moderate-to-severe AD (renewal)

The patient on renewal prescription, has achieved or maintained an adequate response defined as:

- an improvement in EASI score of at least 50% compared to baseline; AND
- an improvement in DLQI score of at least 4 points compared to baseline.

Lebrikizumab must not be used in combination with other biologics or systemic JAK inhibitors for treatment of moderate-to-severe AD.

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As the national HTA agency, ACE conducts evaluations to inform government funding decisions for treatments, diagnostic tests and vaccines, and produces guidance for public hospitals and institutions in Singapore.

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