belimumab (Benlysta®)

Policy # 00295
Original Effective Date: 04/13/2011
Current Effective Date: 08/12/2024

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc. (collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: voclosporin (Lupkynis™)‡ is addressed separately in medical policy 00748.

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Based on review of available data, the Company may consider the use of belimumab (Benlysta®)‡ for the treatment of systemic lupus erythematosus or lupus nephritis in adult patients who are receiving standard therapy to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility for the use of belimumab (Benlysta) will be considered when all of the following patient selection criteria are met:

- Initial
  - Patient meets ONE of the following:
    - Patient has a diagnosis of active systemic lupus erythematosus (SLE); OR
    - Patient has a diagnosis of active lupus nephritis (LN); AND
  - For Benlysta intravenous (IV) requests:
    - Patient is ≥ 5 years of age; AND
  - For Benlysta subcutaneous requests:
    - Patient is ≥ 5 years of age if Benlysta is being used for the treatment of SLE; OR
    - Patient is ≥ 18 years of age if Benlysta is being used for the treatment of LN; AND
  - Patient is autoantibody-positive (ANA [anti-nuclear antibody] or anti-double-stranded deoxyribonucleic acid [anti-dsDNA]); AND

  - Patient is receiving standard therapy (i.e., corticosteroids, antimalarials, non-steroidal anti-inflammatory drugs [NSAIDs], immunosuppressives); AND
  - Patient is NOT receiving other biologics.
- Continuation
  - Patient has received an initial authorization for Benlysta; AND
  - Patient has demonstrated a beneficial response to Benlysta for the treatment of active SLE or LN (e.g. reduction in flares, reduction in corticosteroid dose, decrease of anti-dsDNA titer, improvement in complement levels [i.e., C3, C4], or improvement in specific organ dysfunction); AND
    *(Note: This specific patient selection criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met*.)
  - Patient is receiving standard therapy (i.e., corticosteroids, antimalarials, NSAIDs, immunosuppressives); AND
  - Patient is NOT receiving other biologics.

When Services Are Considered Not Medically Necessary

Based on review of available data, the Company considers the continuation of belimumab (Benlysta) when the patient has not previously demonstrated a beneficial response to the drug to be **not medically necessary.****

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers the use of belimumab (Benlysta) when patient selection criteria are not met (except those denoted to be **not medically necessary**)** OR for use in any other indication (including, but not limited to severe active central nervous system [CNS] lupus) not listed in the above patient selection criteria to be **investigational.***

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Background/Overview

Benlysta is a recombinant, fully human, IgG1λ monoclonal antibody that is indicated for the treatment of active SLE and active LN. It works by binding to and inhibiting the biological activity of soluble B lymphocyte stimulator (BLyS) protein, a member of the tumor necrosis factor (TNF) ligand family. BLyS plays a role in B cell selection and survival and is expressed by a variety of cell types, including neutrophils, monocytes, macrophages, dendritic cells, and T cells. There are 3 receptors for BLyS. BLyS receptor 3 (BR3) is the only BLyS receptor found on newly formed and mature primary B cells, and BLyS is its only ligand. Blockade by Benlysta is expected to affect these cells more than memory B cells and plasma cells, which have other ligand activators.

Benlysta is available in two forms: IV and subcutaneous. The IV form is dosed at 10 mg/kg at 2-week intervals for the first 3 doses and at 4-week intervals thereafter. The subcutaneous formulation is supplied as a 200 mg/ mL single-dose prefilled autoinjector and single-dose prefilled syringe. The subcutaneous version requires a loading dose of 400 mg weekly for the first 4 doses when treating LN but is given as 200 mg once weekly for SLE and LN maintenance in adult patients. The recommended subcutaneous dosage for pediatric patients weighing ≥ 40 kg is 200 mg once weekly, and 200 mg once every 2 weeks in patients weighing 15 kg to < 40 kg when treating SLE. The safety and efficacy of subcutaneous administration of Benlysta have not been established in pediatric patients with LN. Note that the subcutaneous use of Benlysta in pediatric patients with SLE only applies to the autoinjector. The prefilled syringe has not been studied in children less than 18 years of age.

Systemic Lupus Erythematosus

SLE is a chronic inflammatory disease of unknown cause that can affect the mucocutaneous, gastrointestinal, hematologic, musculoskeletal, neurologic, psychiatric, pulmonary, renal, and reproductive systems. Immunologic abnormalities are a prominent feature of the disease. For example, autoantibodies against dsDNA (i.e. anti-dsDNA) and Smith nuclear antigen (i.e. anti-Sm) are highly specific for SLE. Increases in anti-dsDNA titers, erythrocyte sedimentation rate (ESR), and serum C-reactive protein (CRP), and a decrease in serum complement levels, often precede active SLE.

Treatment options for SLE include prednisone, hydroxychloroquine, NSAIDs and immunosuppressive agents, such as cyclophosphamide, methotrexate, azathioprine, and mycophenolate.

Lupus Nephritis
LN is renal complication of SLE that is characterized by an inflammatory response to immune complexes in the kidney. It occurs in approximately 40% of patients with SLE and it may be diagnosed prior to SLE. Patients with SLE should be screened regularly for LN via urinalysis and assessment of kidney function. When these screenings are abnormal, kidney biopsy should be considered to confirm the diagnosis and determine the classification of disease. Treatment of LN may include corticosteroids, cyclophosphamide, mycophenolate mofetil, and hydroxychloroquine. Response to treatment is often slow, and relapses are reported in nearly 50% of patients. LN may worsen over time, with 10-30% of patients developing kidney failure requiring dialysis or kidney transplantation.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)
In March 2011, the FDA approved belimumab (Benlysta) IV to treat adult patients with active, ANA lupus (SLE) who are receiving standard therapy, including corticosteroids, antimalarials, immunosuppressives, and nonsteroidal anti-inflammatory drugs. In April 2019, the indication was expanded to include pediatric patients aged 5-17 years of age. The indication was further expanded in December 2020 to include adults with active lupus nephritis who are receiving standard therapy. In July 2022, the indication was expanded to include pediatric patients with active lupus nephritis.

In July 2017, the FDA approved a subcutaneous formulation of Benlysta for the treatment of adult patients with active, autoantibody-positive SLE who are receiving standard therapy. The indication for the subcutaneous formulation was expanded to include adults with active lupus nephritis who are receiving standard therapy in December of 2020. In May of 2024, the FDA further expended the approval to patients 5 years of age and older with active SLE who are receiving standard therapy.

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Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, technology evaluation centers, reference to federal regulations, other plan medical policies, and accredited national guidelines.

Intravenous

The safety and effectiveness of Benlysta administered IV plus standard therapy were evaluated in 3 randomized, double-blind, placebo-controlled trials involving 2,133 patients with SLE. Patients with severe active lupus nephritis and severe active CNS lupus were excluded. Patients were on a stable standard therapy SLE treatment regimen comprising any of the following (alone or in combination): corticosteroids, antimalarials, NSAIDs, and immunosuppressives. Use of other biologics and IV cyclophosphamide were not permitted.

Trial 1 enrolled 449 patients and evaluated doses of 1, 4, and 10 mg/kg Benlysta plus standard therapy compared with placebo plus standard therapy over 52 weeks in patients with SLE. The co-primary endpoints were percent change in Safety of Estrogens in Lupus Erythematosus National Assessment-Systemic Lupus Erythematosus Disease Activity Index (SELENA-SLEDAI) score at Week 24 and time to first flare over 52 weeks. No significant differences between any of the groups receiving Benlysta and the group receiving placebo were observed. Exploratory analysis of this trial identified a subgroup of patients (72%) who were autoantibody positive in whom Benlysta appeared to offer benefit. The results of this trial informed the design of Trials 2 and 3 and led to the selection of a target population and indication that is limited to ANA SLE patients.

Trials 2 and 3 were randomized, double-blind, placebo-controlled trials in patients with SLE that were similar in design except duration - Trial 2 (N = 819) was 76 weeks' duration and Trial 3 (N = 865) was 52 weeks' duration. The primary efficacy endpoint was a composite endpoint (SLE Responder Index-4 or SRI-4) that defined response as meeting each of the following criteria at Week 52 compared with baseline: ≥4-point reduction in the SELENA-SLEDAI score; and no new British Isles Lupus Assessment Group (BILAG) A organ domain score or 2 new BILAG B organ domain scores; and no worsening (<0.30-point increase) in Physician's Global Assessment (PGA) score. The SRI uses the SELENA-SLEDAI score as an objective measure of reduction in global disease

activity; the BILAG index to ensure no significant worsening in any specific organ system; and the PGA to ensure that improvements in disease activity are not accompanied by worsening of the patient's condition overall.

In both Trials 2 and 3, the proportion of patients with SLE achieving an SLE Responder Index-4 (SRI-4), as defined for the primary endpoint, was significantly higher in the group receiving Benlysta 10 mg/kg plus standard therapy than in the group receiving placebo plus standard therapy (43% vs. 34%, P=0.021 in trial 2 and 58% vs. 44%, P<0.001 in trial 3). The effect on the SRI-4 was not consistently significantly different for patients receiving Benlysta 1 mg/kg plus standard therapy relative to placebo plus standard therapy in both trials. The 1-mg/kg dose is not recommended. The trends in comparisons between the treatment groups for the rates of response for the individual components of the endpoint were generally consistent with that of the SRI-4. At Week 76 in Trial 2, the SRI-4 response rate with Benlysta 10 mg/kg was not significantly different from that of placebo (39% and 32%, respectively).

Exploratory sub-group analyses of SRI-4 response rate in black patients (n = 148) were performed. The SRI-4 response rate in black patients in groups receiving Benlysta plus standard therapy was less than that in the group receiving placebo plus standard therapy (22/50 or 44% for placebo, 15/48 or 31% for Benlysta 1 mg/kg, and 18/50 or 36% for Benlysta 10 mg/kg).

A fourth trial (Trial 4) was a randomized, placebo-controlled trial in black patients with SLE (n=448) conducted in North America, South America, Europe, and Africa. This trial had the same study design as Trials 2 and 3, but patients had a baseline SELENA-SLEDAI score of $\geq$8 and used the modified SLEDAI-2K scoring for proteinuria. The proportion of black patients achieving an SRI-S2K response at Week 52 (primary endpoint) was higher in the group receiving Benlysta 10 mg/kg plus standard therapy relative to the group receiving placebo plus standard therapy. However, the treatment difference was not statistically significant. Although no definitive conclusion can be drawn from this limited data, caution should be used when considering treatment with Benlysta in black/African American patients.

The safety and effectiveness of Benlysta 10 mg/kg administered intravenously over 1 hour on Days 0, 14, 28, and then every 28 days plus standard therapy were evaluated in a 104-week, randomized, double-blind, placebo-controlled trial in 448 patients with active proliferative and/or membranous lupus nephritis (Trial 5). The patients had a clinical diagnosis of SLE according to the American

College of Rheumatology classification criteria; biopsy-proven lupus nephritis Class III, IV, and/or V; and had active renal disease at screening requiring standard therapy: corticosteroids with 1) mycophenolate for induction followed by mycophenolate for maintenance, or 2) cyclophosphamide for induction followed by azathioprine for maintenance. The primary efficacy endpoint was Primary Efficacy Renal Response (PERR) at Week 104, defined as a response at Week 100 confirmed by a repeat measurement at Week 104 of the following parameters: urine protein:creatinine ratio (UPCR)$\leq$0.7 g/g and eGFR $\geq$60 mL/min/1.73 m^2 or no decrease in eGFR of >20% from pre-flare value. This endpoint was met by a significantly greater proportion of patients in the Benlysta group (43%) compared to the placebo group (32%). The odds ratio vs placebo was 1.6 (p=0.031).

Trial 6 was performed to evaluate the safety of intravenous Benlysta plus standard therapy compared to placebo in 93 pediatric patients. The adverse reactions observed were consistent with those observed in adults. Additionally, a numerically higher proportion of patients in the Benlysta treatment group achieved the response in SRI-4 compared to those patients receiving placebo.

Subcutaneous
The safety and effectiveness of Benlysta administered subcutaneously were evaluated in a randomized, double-blind, placebo-controlled trial involving 836 patients with SLE. Patients with severe active lupus nephritis and severe active CNS lupus were excluded. The trial evaluated Benlysta 200 mg once weekly plus standard therapy (n = 556) compared with placebo once weekly plus standard therapy (n = 280) over 52 weeks in patients with active SLE disease.

The primary efficacy endpoint was the SRI-4 at Week 52 as described in the IV trials. The proportion of patients achieving an SRI-4 response was significantly higher in patients receiving Benlysta plus standard therapy compared with placebo plus standard therapy (61% vs. 48%, P=0.0006). The trends comparing the treatment groups with respect to the probability of response for the individual components of the endpoint were consistent with that of the SRI-4.

Exploratory sub-group analyses of SRI-4 response rate in black patients (n = 91) were performed. The SRI-4 response rate was slightly higher in black patients receiving Benlysta plus standard therapy (26/58 or 45%) compared with the group receiving placebo plus standard therapy (13/33 or 39%), but the treatment difference was not as large as that observed in the overall population and no definitive conclusion can be drawn from this subgroup analysis. Caution should be used when considering treatment with Benlysta in black/African American patients.

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The use of Benlysta, administered subcutaneously in pediatric patients (5 to less than 18 years of age and weighing at least 15 kg) with SLE, is supported by evidence from an open-label pharmacokinetic trial (subcutaneous administration of BENLYSTA in pediatric patients with SLE) and Trial 6 (a pharmacokinetic, efficacy, and safety study of intravenous dosing in pediatric patients with SLE). The pharmacokinetics of belimumab, following subcutaneous administration in pediatric patients, are estimated to be similar to adults who receive Benlysta subcutaneously and pediatric patients who receive Benlysta intravenously.

References

1. Benlysta [package insert]. GlaxoSmithKline. Research Triangle Park, North Carolina. Updated May 2024.
2. UpToDate. Systemic Lupus Erythematosus.
3. Inflammatory Conditions- Benlysta SC Prior Authorization Policy. Express Scripts. Updated July 2018.
4. Lupkynis Drug Evaluation. Express Scripts. Updated February 2021.

Policy History

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04/07/2011	Medical Policy Committee review
04/13/2011	Medical Policy Implementation Committee approval. New policy
04/12/2012	Medical Policy Committee review
04/25/2012	Medical Policy Implementation Committee approval.
04/04/2013	Medical Policy Committee review
04/24/2013	Medical Policy Implementation Committee approval. No changes to coverage. A few cosmetic changes. Consolidated the When Services Are Considered Investigational section.
05/01/2014	Medical Policy Committee review
05/21/2014	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
05/07/2015	Medical Policy Committee review
05/20/2015	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

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08/03/2015	Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
05/05/2016	Medical Policy Committee review
05/18/2016	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
05/04/2017	Medical Policy Committee review
05/17/2017	Medical Policy Implementation Committee approval. Coverage eligibility unchanged
05/03/2018	Medical Policy Committee review
05/16/2018	Medical Policy Implementation Committee approval. Updated background information and rationale.
05/02/2019	Medical Policy Committee review
05/15/2019	Medical Policy Implementation Committee approval. Added continuation criteria. Updated age requirement for intravenous formulation.
05/07/2020	Medical Policy Committee review
05/13/2020	Medical Policy Implementation Committee approval. Coverage eligibility unchanged
05/06/2021	Medical Policy Committee review
05/12/2021	Medical Policy Implementation Committee approval. Updated criteria and background information to include new approval for lupus nephritis.
05/05/2022	Medical Policy Committee review
05/11/2022	Medical Policy Implementation Committee approval. Coverage eligibility unchanged
02/02/2023	Medical Policy Committee review
02/08/2023	Medical Policy Implementation Committee approval. Updated criteria and background information to reflect approval of the IV formulation for lupus nephritis indication in patients aged 5-17 years.
02/01/2024	Medical Policy Committee approval
02/14/2024	Medical Policy Implementation Committee approval. Coverage eligibility unchanged

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07/02/2024 Medical Policy Committee review
07/10/2024 Medical Policy Implementation Committee approval. Updated criteria and background information to reflect approval of the subcutaneous formulation for use in SLE in patients aged 5-17 years of age.
Next Scheduled Review Date: 07/2025

Coding

The five character codes included in the Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines are obtained from Current Procedural Terminology (CPT®)‡, copyright 2023 by the American Medical Association (AMA). CPT is developed by the AMA as a listing of descriptive terms and five character identifying codes and modifiers for reporting medical services and procedures performed by physician.

The responsibility for the content of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines is with Blue Cross and Blue Shield of Louisiana and no endorsement by the AMA is intended or should be implied. The AMA disclaims responsibility for any consequences or liability attributable or related to any use, nonuse or interpretation of information contained in Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines. Fee schedules, relative value units, conversion factors and/or related components are not assigned by the AMA, are not part of CPT, and the AMA is not recommending their use. The AMA does not directly or indirectly practice medicine or dispense medical services. The AMA assumes no liability for data contained or not contained herein. Any use of CPT outside of Blue Cross Blue Shield of Louisiana Medical Policy Coverage Guidelines should refer to the most current Current Procedural Terminology which contains the complete and most current listing of CPT codes and descriptive terms. Applicable FARS/DFARS apply.

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Codes used to identify services associated with this policy may include (but may not be limited to) the following:

Code Type	Code
CPT	No codes
HCPCS	J0490
ICD-10 Diagnosis	All Related Diagnoses

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
    1. Consultation with technology evaluation center(s);
    2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
    3. Reference to federal regulations.

**Medically Necessary (or "Medical Necessity") - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

A. In accordance with nationally accepted standards of medical practice;
B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and

C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, "nationally accepted standards of medical practice" means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.

NOTICE: Federal and State law, as well as contract language, including definitions and specific contract provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage.