

Utilization Management Medical Policy

POLICY: Immunologicals – Nucala Utilization Management Medical Policy

- Nucala[®] (mepolizumab subcutaneous injection – GlaxoSmithKline)

REVIEW DATE: 04/19/2024

OVERVIEW

Nucala, an interleukin (IL)-5 antagonist monoclonal antibody, is indicated for the following uses:¹

- **Asthma**, as add-on maintenance treatment of patients ≥ 6 years of age with severe disease with an eosinophilic phenotype. Limitations of Use: Nucala is not indicated for the relief of acute bronchospasm or status asthmaticus.
- **Chronic rhinosinusitis with nasal polyps (CRSwNP)**, as an add-on maintenance treatment in patients ≥ 18 years of age with an inadequate response to nasal corticosteroids.
- **Eosinophilic granulomatosis with polyangiitis (EGPA)** [formerly known as Churg-Strauss Syndrome] in adult patients.
- **Hypereosinophilic syndrome (HES)**, in patients ≥ 12 years of age who have had HES for ≥ 6 months without an identifiable non-hematologic secondary cause.

Clinical Efficacy*Asthma*

In the pivotal asthma studies of Nucala, patients were generally required to have elevated eosinophils at baseline (e.g., peripheral blood eosinophil count ≥ 150 cells/microliter at screening or ≥ 300 cells/microliter at some time during the previous year). Across the studies, efficacy was assessed as early as 24 weeks.¹⁻⁴

Chronic Rhinosinusitis with Nasal Polyps

In one pivotal study involving adult patients with chronic rhinosinusitis with nasal polyposis, the primary efficacy endpoints were assessed at 52 weeks.^{1,5} However, improvements in nasal polyp size and symptoms compared with placebo were observed much earlier on in the course of treatment (i.e., between 9 and 24 weeks).

Eosinophilic Granulomatosis with Polyangiitis

One study evaluated the efficacy of Nucala in patients ≥ 18 years of age with relapsing or refractory EGPA who had received ≥ 4 weeks of a stable oral corticosteroid dose (i.e., prednisolone, prednisone).⁶ Patients were also required to have a baseline relative eosinophil level of 10% or an absolute eosinophil level $> 1,000$ cells per microliter; however, the baseline mean absolute eosinophil level was approximately 175 cells per microliter across both treatment groups. While remission benefit of Nucala was demonstrated in the overall patient population, the magnitude of improvements observed with Nucala were larger in patients with baseline eosinophil levels ≥ 150 cells per microliter than in patients with lower baseline levels.

Hypereosinophilic Syndrome

One study evaluated the efficacy of Nucala in patients ≥ 12 years of age with hypereosinophilic syndrome for ≥ 6 months.⁷ Patients with non-hematologic secondary hypereosinophilic syndrome and those with FIP1L1-PDGFR α kinase-positive hypereosinophilic syndrome were excluded. All patients had a baseline blood eosinophil count $\geq 1,000$ cells per microliter. Additionally, all patients had been on stable therapy

for their hypereosinophilic syndrome (e.g., oral corticosteroids, immunosuppressive agents, or cytotoxic therapy) for 4 weeks or more prior to randomization. Efficacy was assessed following 32 weeks of therapy.

Guidelines

Asthma Guidelines

The Global Initiative for Asthma Global Strategy for Asthma Management and Prevention (2023) proposes a step-wise approach to asthma treatment.⁸ Nucala is listed as an option for add-on therapy in patients ≥ 6 years of age with severe eosinophilic asthma (i.e., patients who continue to experience exacerbations or have poor symptom control despite treatment with a high-dose ICS/long-acting beta₂-agonist [LABA] and who have eosinophilic biomarkers or require therapy with maintenance oral corticosteroids). Higher blood eosinophil levels, higher number of severe exacerbations in the previous year, adult-onset asthma, nasal polyposis, maintenance oral corticosteroid requirements, and low lung function may predict a good asthma response to Nucala.

According to the European Respiratory Society/American Thoracic Society guidelines (2014; updated in 2020), severe asthma is defined as asthma which requires treatment with a high-dose ICS in addition to a second controller medication (and/or systemic corticosteroids) to prevent it from becoming uncontrolled, or asthma which remains uncontrolled despite this therapy.^{9,10} Uncontrolled asthma is defined as asthma that worsens upon tapering of high-dose ICS or systemic corticosteroids or asthma that meets one of the following four criteria:

- 1) Poor symptom control: Asthma Control Questionnaire consistently ≥ 1.5 or Asthma Control Test < 20 ;
- 2) Frequent severe exacerbations: two or more bursts of systemic corticosteroids in the previous year;
- 3) Serious exacerbations: at least one hospitalization, intensive care unit stay, or mechanical ventilation in the previous year;
- 4) Airflow limitation: forced expiratory volume in 1 second (FEV₁) $< 80\%$ predicted after appropriate bronchodilator withholding.

Chronic Rhinosinusitis with Nasal Polyps Guidelines

The Joint Task Force on Practice Parameters (JTFPP) published a focused guideline update for the medical management of CRSwNP (2023), which updated recommendations regarding intranasal corticosteroids and biologic therapies.¹¹ Intranasal corticosteroids are recommended for the treatment of CRSwNP. Use of biologics (e.g., Nucala) is also recommended. However, in patients who derived a sufficient benefit from other therapies such as intranasal corticosteroids, surgery, or aspirin therapy after desensitization, biologics may not be preferred. Conversely, biologics may be preferred over other medical treatment options in patients who continue to have a high burden of disease despite receiving at least 4 weeks of treatment with an intranasal corticosteroid.

The diagnosis of CRSwNP was not addressed in this focused guideline update. Previous guidelines have noted that the presence of two or more signs and symptoms of chronic rhinosinusitis (e.g., rhinorrhea, postnasal drainage, anosmia, nasal congestion, facial pain, headache, fever, cough, and purulent discharge) that persist for an extended period of time makes the diagnosis of chronic rhinosinusitis likely.¹²⁻¹⁵ However, this requires confirmation of sinonasal inflammation, which can either be done via direct visualization or computed tomography (CT) scan. Oral corticosteroids and surgical intervention were not specifically addressed in this update. Prior guidelines recommend short courses of oral corticosteroid as needed and consideration of surgical removal as an adjunct to medical therapy in patients with CRSwNP that is not responsive or is poorly responsive to medical therapy.^{12,13,15}

Eosinophilic Granulomatosis with Polyangiitis Guidelines

The American College of Rheumatology (ACR)/Vasculitis Foundation Guideline for the Management of Antineutrophil Cytoplasmic Antibody-Associated (ANCA) Vasculitis (2021) includes recommendations regarding the management of EGPA.¹⁶ For patients with active, non-severe EGPA, combination therapy with Nucala and corticosteroids is recommended over other traditional treatments such as methotrexate, azathioprine, or mycophenolate mofetil in the setting of remission induction. Non-severe EGPA is defined as vasculitis in the absence of life- or organ-threatening manifestations. In general, the clinical profile includes rhinosinusitis, asthma, mild systemic symptoms, uncomplicated cutaneous disease, and mild inflammatory arthritis. Nucala, in combination with corticosteroids, is also a recommended therapy for patients who have relapsed and are experiencing non-severe disease manifestations (i.e., asthma and/or sinonasal disease) while receiving either low-dose corticosteroids alone, methotrexate, azathioprine, or mycophenolate mofetil. For patients with severe EGPA, cyclophosphamide or rituximab is preferred over Nucala for remission induction. The European Alliance of Associations for Rheumatology (EULAR) recommendations for the management of ANCA-associated vasculitis (2022) also address the use of Nucala for the treatment of EGPA.¹⁷ Similar to the ACR guidelines, EULAR recommends Nucala for induction of remission in patients with relapsing or refractory EGPA without active organ- or life-threatening disease. It is also recommended for maintenance of remission in these patients. Additionally, it is also among the many recommended treatment options for the maintenance of remission of EGPA after induction of remission for organ-threatening or life-threatening disease.

Hypereosinophilia Guidelines

The World Health Organization (WHO) and international consensus classification of eosinophilic disorders update on diagnosis, risk stratification, and management (2024) notes that corticosteroids remain first-line therapy for the treatment of HES.¹⁸ Nucala, hydroxyurea, pegylated-interferon, imatinib, and hematopoietic stem cell transplantation are listed as second-line treatment options.

POLICY STATEMENT

Prior Authorization is recommended for medical benefit coverage of Nucala. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indications. Extended approvals are allowed if the patient continues to meet the Criteria and Dosing. Requests for doses outside of the established dosing documented in this policy will be considered on a case-by-case basis by a clinician (i.e., Medical Director or Pharmacist). All approvals are provided for the durations noted below. In cases where the approval is authorized in months, 1 month is equal to 30 days. Because of the specialized skills required for evaluation and diagnosis of patients treated with Nucala, as well as the monitoring required for adverse events and long-term efficacy, initial approval requires Nucala to be prescribed by or in consultation with a physician who specializes in the condition being treated.

Automation: None.

RECOMMENDED AUTHORIZATION CRITERIA

Coverage of Nucala is recommended in those who meet one of the following criteria:

FDA-Approved Indications

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- 1) **Asthma.** Approve Nucala for the duration noted if the patient meets ONE of the following (A or B):
- A) **Initial Therapy.** Approve for 6 months if the patient meets the following (i, ii, iii, iv, and v):
- i. Patient is ≥ 6 years of age; AND
 - ii. Patient has a blood eosinophil level ≥ 150 cells per microliter within the previous 6 weeks or within 6 weeks prior to treatment with Nucala or another monoclonal antibody therapy that may lower blood eosinophil levels; AND
Note: Examples of monoclonal antibody therapies that may lower blood eosinophil levels include Nucala, Adbry (tralokinumab-ldrm subcutaneous injection), Cinqair (reslizumab intravenous infusion), Dupixent (dupilumab subcutaneous injection), Fasenra (benralizumab subcutaneous injection), Tezspire (tezepelumab-ekko subcutaneous injection), and Xolair (omalizumab subcutaneous injection).
 - iii. Patient has received at least 3 consecutive months of combination therapy with BOTH of the following (a and b):
 - a) An inhaled corticosteroid; AND
 - b) At least one additional asthma controller or asthma maintenance medication; AND
Note: Examples of additional asthma controller or asthma maintenance medications are inhaled long-acting beta₂-agonists, inhaled long-acting muscarinic antagonists, and monoclonal antibody therapies for asthma (e.g., Cinqair, Dupixent, Fasenra, Nucala, Tezspire, Xolair). Use of a combination inhaler containing both an inhaled corticosteroid and additional asthma controller/maintenance medication(s) would fulfill the requirement for both criteria a and b.
 - iv. Patient has asthma that is uncontrolled or was uncontrolled at baseline as defined by ONE of the following (a, b, c, d, or e):
Note: “Baseline” is defined as prior to receiving Nucala or another monoclonal antibody therapy for asthma. Examples of monoclonal antibody therapies for asthma include Nucala, Cinqair, Dupixent, Fasenra, Tezspire, and Xolair.
 - a) Patient experienced two or more asthma exacerbations requiring treatment with systemic corticosteroids in the previous year; OR
 - b) Patient experienced one or more asthma exacerbation(s) requiring a hospitalization, an emergency department visit, or an urgent care visit in the previous year; OR
 - c) Patient has a forced expiratory volume in 1 second (FEV₁) $< 80\%$ predicted; OR
 - d) Patient has an FEV₁/forced vital capacity (FVC) < 0.80 ; OR
 - e) Patient has asthma that worsens upon tapering of oral (systemic) corticosteroid therapy; AND
 - v. The medication is prescribed by or in consultation with an allergist, immunologist, or pulmonologist.
- B) **Patient is Currently Receiving Nucala.** Approve for 1 year if the patient meets the following (i, ii, and iii):
- i. Patient has already received at least 6 months of therapy with Nucala; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with Nucala should be considered under criterion 1A (Asthma, Initial Therapy).
 - ii. Patient continues to receive therapy with one inhaled corticosteroid or one inhaled corticosteroid-containing combination inhaler; AND
 - iii. Patient has responded to therapy as determined by the prescriber.
Note: Examples of a response to Nucala therapy are decreased asthma exacerbations; decreased asthma symptoms; decreased hospitalizations, emergency department, urgent care,

or medical clinic visits due to asthma; and decreased requirement for oral corticosteroid therapy.

Dosing. Approve ONE of the following dosing regimens (A or B):

- A) If the patient is ≥ 12 years of age, approve 100 mg administered subcutaneously once every 4 weeks; OR
- B) If the patient is 6 to 11 years of age, approve 40 mg administered subcutaneously once every 4 weeks.

2) **Chronic Rhinosinusitis with Nasal Polyps.** Approve Nucala for the duration noted if the patient meets ONE of the following (A or B):

A) Initial Therapy. Approve for 6 months if the patient meets the following (i, ii, iii, iv, v, and vi):

- i) Patient is ≥ 18 years of age; AND
- ii) Patient has chronic rhinosinusitis with nasal polyps as evidenced by direct examination, endoscopy, or sinus computed tomography (CT) scan; AND
- iii) Patient has experienced two or more of the following symptoms for at least 6 months: nasal congestion, nasal obstruction, nasal discharge, and/or reduction/loss of smell; AND
- iv) Patient meets BOTH of the following (a and b):
 - a) Patient has received at least 4 weeks of therapy with an intranasal corticosteroid; AND
 - b) Patient will continue to receive therapy with an intranasal corticosteroid concomitantly with Nucala; AND
- v) Patient meets ONE of the following (a, b, or c):
 - a) Patient has received at least one course of treatment with a systemic corticosteroid for 5 days or more within the previous 2 years; OR
 - b) Patient has a contraindication to systemic corticosteroid therapy; OR
 - c) Patient has had prior surgery for nasal polyps; AND
- vi) Nucala is prescribed by or in consultation with an allergist, immunologist, or an otolaryngologist (ear, nose and throat [ENT] physician specialist).

B) Patient is Currently Receiving Nucala. Approve for 1 year if the patient meets the following (i, ii, and iii):

- i) Patient has already received at least 6 months of therapy with Nucala; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with Nucala should be considered under criterion 4A [Nasal Polyps, Initial Therapy]).
- ii) Patient continues to receive therapy with an intranasal corticosteroid; AND
- iii) Patient has responded to therapy as determined by the prescriber.
Note: Examples of a response to Nucala therapy are reduced nasal polyp size, improved nasal congestion, reduced sinus opacification, decreased sino-nasal symptoms, improved sense of smell.

Dosing. Approve 100 mg administered subcutaneously once every 4 weeks.

Eosinophilic Granulomatosis with Polyangiitis (EGPA) [formerly known as Churg-Strauss Syndrome]. Approve Nucala for the duration noted if the patient meets ONE of the following (A or B):

- A) Initial Therapy. Approve for 6 months if the patient meets ALL of the following (i, ii, iii, iv, and v):
- i. Patient is ≥ 18 years of age; AND;
 - ii. Patient has active, non-severe disease; AND
Note: Non-severe disease is defined as vasculitis without life- or organ-threatening manifestations. Examples of symptoms in patients with non-severe disease include rhinosinusitis, asthma, mild systemic symptoms, uncomplicated cutaneous disease, mild inflammatory arthritis.
 - iii. Patient has/had a blood eosinophil level ≥ 150 cells per microliter within the previous 6 weeks or within 6 weeks prior to treatment with any monoclonal antibody therapy that may lower blood eosinophil levels; AND
Note: Examples of monoclonal antibody therapies that may lower blood eosinophil levels include Nucala, Adbry (tralokinumab-ldrm subcutaneous injection), Cinqair (reslizumab intravenous infusion), Dupixent (dupilumab subcutaneous injection), Fasenna (benralizumab subcutaneous injection), Tezspire (tezepelumab-ekko subcutaneous injection), and Xolair (omalizumab subcutaneous injection).
 - iv. Patient has tried therapy with a corticosteroid (e.g., prednisone) for a minimum of 4 weeks; AND
 - v. The medication is prescribed by or in consultation with an allergist, immunologist, pulmonologist, or rheumatologist.
- B) Patient is Currently Receiving Nucala. Approve for 1 year if the patient meets the following (i and ii):
- i. Patient has already received at least 6 months of therapy with Nucala; AND
Note: A patient who has received < 6 months of therapy or who is restarting therapy with Nucala should be considered under criterion 2A (Eosinophilic Granulomatosis with Polyangiitis, Initial Therapy).
 - ii. Patient has responded to therapy as determined by the prescriber.
Note: Examples of a response to Nucala therapy are reduced rate of relapse, corticosteroid dose reduction, and reduced eosinophil levels.

Dosing. Approve 300 mg administered subcutaneously once every 4 weeks.

3) **Hyper eosinophilic Syndrome.** Approve Nucala for the duration noted if the patient meets ONE of the following (A or B):

- A) Initial Therapy. Approve for 8 months if the patient meets ALL of the following (i, ii, iii, iv, v, vi, and vii):
- i. Patient is ≥ 12 years of age; AND
 - ii. Patient has had hyper eosinophilic syndrome for ≥ 6 months; AND
 - iii. Patient has FIP1L1-PDGFR α -negative disease; AND
 - iv. Patient does NOT have an identifiable non-hematologic secondary cause of hyper eosinophilic syndrome according to the prescriber; AND
Note: Examples of secondary causes of hyper eosinophilic syndrome include drug hypersensitivity, parasitic helminth infection, human immunodeficiency virus infection, non-hematologic malignancy.

- v. Patient has/had a blood eosinophil level $\geq 1,000$ cells per microliter prior to treatment with any monoclonal antibody therapy that may lower blood eosinophil levels; AND
Note: Examples of monoclonal antibody therapies that may lower blood eosinophil levels include Nucala, Adbry (tralokinumab-ldrm subcutaneous injection), Cinqair (reslizumab intravenous infusion), Dupixent (dupilumab subcutaneous injection), Fasenna (benralizumab subcutaneous injection), Tezspire (tezepelumab-ekko subcutaneous injection), and Xolair (omalizumab subcutaneous injection).
 - vi. Patient has tried at least one other treatment for hypereosinophilic syndrome for a minimum of 4 weeks; AND
Note: Example of treatments for hypereosinophilic syndrome include systemic corticosteroids, hydroxyurea, cyclosporine, imatinib, or pegylated-interferon.
 - vii. Nucala is prescribed by or in consultation with an allergist, immunologist, pulmonologist, or rheumatologist.
- B) Patient is Currently Receiving Nucala.** Approve for 1 year if the patient meets the following (i and ii):
- i. Patient has already received at least 8 months of therapy with Nucala; AND
Note: A patient who has received < 8 months of therapy or who is restarting therapy with Nucala should be considered under criterion 3A (Hypereosinophilic Syndrome, Initial Therapy).
 - ii. Patient has responded to therapy as determined by the prescriber.
Note: Examples of a response to Nucala therapy are decreased number of flares, improved fatigue, reduced corticosteroid requirements, and decreased eosinophil levels.

Dosing. Approve 300 mg administered subcutaneously once every 4 weeks.

CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of Nucala is not recommended in the following situations:

1. **Atopic Dermatitis.** Nucala is not indicated for the treatment of atopic dermatitis.¹ In one small study, intravenous (IV) mepolizumab significantly reduced peripheral blood eosinophil counts in patients with moderate to severe atopic dermatitis.^{19,20} However, mepolizumab IV therapy did not result in clinical success as assessed by Physician's Global Assessment of Improvement scores compared with placebo. Other clinical outcomes were also not significantly improved with mepolizumab IV. Another small study evaluated subcutaneous Nucala in patients with moderate to severe atopic dermatitis.²¹ Following 16 weeks of therapy, Nucala did not demonstrate efficacy, with 11% (n = 2/11) of patients meeting the primary endpoint of treatment success with Nucala vs. 0 with placebo. Further research is warranted to determine if Nucala has a place in therapy in the treatment of these conditions.
2. **Chronic Obstructive Pulmonary Disease (COPD).** Nucala is not indicated for the treatment of COPD.¹ Two Phase III studies, METREX (n = 836) and METREO (n = 675) evaluated Nucala in patients with COPD who had a history of moderate or severe exacerbations despite treatment with inhaled triple therapy (inhaled corticosteroid/long-acting muscarinic antagonist/long-acting beta₂-agonist).²² METREX included patients regardless of eosinophil counts, but did include a subgroup of patients who were considered to have an eosinophilic phenotype (eosinophil count ≥ 150 cells/microliter) [n = 462]. METREO only included patients with an eosinophilic phenotype (defined as an eosinophil count ≥ 150 cells/microliter at screening or ≥ 300 cells/microliter within the previous year). Overall, lower COPD exacerbation rates were observed with Nucala vs. placebo; however, none of these reductions were statistically significant in either the METREX overall modified intent to treat

(mITT) population or the METREO mITT population (which included all eosinophilic phenotype patients). In the subgroup of patients in the METREX study with an eosinophilic phenotype, the COPD exacerbation rates were statistically lower with Nucala vs. placebo, as was the difference in the time to first exacerbation. In July 2018, the FDA's Pulmonary Allergy Drugs Advisory Committee voted against approval of Nucala as an add-on treatment to inhaled corticosteroid-based maintenance treatments to reduce flare-ups in patients with COPD.²³ The Committee had concerns about the defining criteria for the eosinophilic phenotype of COPD as well as the lack of data on patient asthma history. Subsequently, in September 2018, the FDA rejected the approval of Nucala for COPD citing the need for additional clinical data. Current COPD guidelines from the Global Initiative for Chronic Lung Disease (2024) note the mixed data with Nucala.²⁴ The guidelines state that further studies are needed to determine if Nucala may have a role in a highly selected subgroup of patients with eosinophilic COPD.

- 3. Concurrent use of Nucala with another Monoclonal Antibody Therapy.** The efficacy and safety of Nucala used in combination with other monoclonal antibody therapies have not been established. Note: Monoclonal antibody therapies are Adbry[®] (tralokinumab-ldrm subcutaneous injection), Cinqair[®] (reslizumab intravenous injection), Dupixent[®] (dupilumab subcutaneous injection), Fasenna[®] (benralizumab subcutaneous injection), Teszpire[®] (tezepelumab-ekko subcutaneous injection), or Xolair[®] (omalizumab subcutaneous injection).
- 4. Eosinophilic Esophagitis, Eosinophilic Gastroenteritis, or Eosinophilic Colitis.** Nucala is not indicated for the treatment of eosinophilic esophagitis, eosinophilic gastroenteritis or eosinophilic colitis.¹ A few small studies reported IV mepolizumab to be efficacious in these conditions.²⁵⁻²⁷ Of note, Nucala is not approved for IV administration.¹ One randomized, double-blind trial (n = 66) evaluated the efficacy of Nucala in patients with EoE.²⁸ Following 3 months of therapy, there was no statistically significant improvement in dysphagia symptoms with Nucala vs. placebo, as measured by the EoE Symptom Activity Index (EEsAI) [primary endpoint]. The EEsAI was also not significantly different between the two treatment groups at 6 months of treatment. However, significantly more patients achieved a histologic response (i.e., < 15 eosinophils/high-power field) with Nucala compared with placebo. Guidelines for the management of eosinophilic esophagitis from the American Gastroenterological Association (AGA) and the Joint Task Force on Allergy-Immunology Practice Parameters (2020) only recommend using anti-interleukin-5 therapies in the context of a clinical trial.²⁹ Further research is warranted to determine if Nucala has a place in therapy in the treatment of these conditions.
- 5. Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria.** Criteria will be updated as new published data are available.

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HISTORY

Type of Revision	Summary of Changes	Date Reviewed
Annual Revision	Conditions not recommended for approval: Criteria were updated to clarify that use of Nucala with another monoclonal antibody therapy is specific to Cinqair, Fasentra, Dupixent, Tezspire, Xolair, and Adbry.	03/22/2023
Selected Revision	Chronic Rhinosinusitis with Nasal Polyyps: Approval condition updated from “Nasal Polyyps” to “Chronic Rhinosinusitis with Nasal Polyyps”. Duration of the intranasal corticosteroid requirement was changed from 3 months to 4 weeks.	02/14/2024
Annual Revision	Asthma: Removed leukotriene receptor antagonists as an example of additional asthma controller or asthma maintenance medications.	04/19/2024