AlloMap® Molecular Expression Testing for Post-Heart-Transplant Rejection

Last Review Date: April 21, 2017	Number: MG.MM.LA.11C5

Medical Guideline Disclaimer

 The treating physician or primary care provider must submit to EmblemHealth the clinical evidence that the patient meets the criteria for the treatment or surgical procedure. Without this documentation and information, EmblemHealth will not be able to properly review the request for prior authorization. The clinical review criteria expressed below reflects how EmblemHealth determines whether certain services or supplies are medically necessary. EmblemHealth established the clinical review criteria based upon a review of currently available clinical information (including clinical outcome studies in the peer-reviewed published medical literature, regulatory status of the technology, evidence-based guidelines of public health and health research agencies, evidence-based guidelines and positions of leading national health professional organizations, views of physicians practicing in relevant clinical areas, and other relevant factors). EmblemHealth expressly reserves the right to revise these conclusions as clinical information changes, and welcomes further relevant information. Each benefit program defines which services are covered. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered and/or paid for by EmblemHealth, as some programs exclude coverage for services or supplies that EmblemHealth considers medically necessary. If there is a discrepancy between this guideline and a member's benefits program, the benefits program will govern. In addition, coverage may be mandated by applicable legal requirements of a state, the Federal Government or the Centers for Medicare & Medicaid Services (CMS) for Medicare and Medicaid members. All coding and web site links are accurate at time of publication. EmblemHealth Services Company LLC, ("EmblemHealth") has adopted the herein policy in providing management, administrative and other services to HIP Health Plan of New York, HIP Insurance Company of New York, Group Health Incorporated and GHI HMO Select, related to health benefit plans offered by these entities. All of the aforementioned entities are affiliated companies under common control of EmblemHealth Inc.

Definitions

AlloMap® Molecular Expression Testing — an In vitro diagnostic multivariate index assay (IVDMIA) test service, performed in a single laboratory, assessing a 20-gene expression profile of RNA isolated from peripheral blood mononuclear cells). The test is used to aid in the identification of heart transplant (HT) recipients, with stable allograft function, who have a low probability of moderate/severe acute cellular rejection (ACR) at the time of testing.

An algorithm generating a 0–40 score range is applied to the results to predict the likelihood of rejection. The predictive value of the score varies by post-HT time intervals (see table below)

AlloMap Test Results

Low risk threshold score	Results interpretation
Month 2–6: 30	Score < threshold: No biopsy (Note: EmblemHealth coverage commences at ≥ 6 months)
Month 6–12: 34	Score ≥ threshold: Biopsy within 5 days of result (>34)
Month 12+: 34	Score ≥ threshold, after 3 prior scores ≥ 34 1. Resume biopsies 2. Defer and screen with echo and clinical assessment, but only after discussion with primary cardiologist.

International Society of Heart and Lung Transplantation (ISHLT) Grading System for Acute Cellular Rejection *

Grade	Results interpretation
0	No rejection
1R	Mild — Interstitial and/or perivascular infiltrate with up to one focus of myocyte damage
2R	Moderate — ≥ foci of infiltrate with associated myocyte damage
3R	Severe — diffuse infiltrate with multifocal myocyte damage, with or without edema, hemorrhage or vasculitis

* The grading using the ISHLT nomenclature was adopted in 1990 and revised in 2004. Grade 1R includes grades 1A, 1B, and 2. In the 1990 system, grade 2R was grade 3A and grade 3R was grades 3B and 4.

Guideline

The incorporation of AlloMap into a post-HT surveillance paradigm presents the means to reduce invasive biopsy; however, EmblemHealth does not regard the test as a suitable biopsy replacement within the first 6 months.

Members ≥ 15 years of age (from 6 months–5 years post HT) are eligible for AlloMap testing (every 1–3 months) to rule out moderate–severe ACR (grade ≥ 2R) when the following criteria are met:

1. Clinically stable outpatient basis (absence of prior or current evidence of antibody-mediated rejection [AMR] with associated hemodynamic compromise).[1]
2. Left ventricular ejection fraction (LVEF) ≥ 45%

Limitations/Exclusions

1. Coverage consideration may be given when clinical scenarios preclude the completion of a biopsy; e.g.:
    a. Access difficulty.
    b. Intolerance to biopsy
    c. Inability to pass biotome into the right ventricle
2. Continuation of AlloMap testing is not warranted when both of the following are applicable:
    a. 3 Allomap scores > 34
    b. No signs of rejection on any follow-up EMBs.
3. The use of > 1 “routine” surveillance method is not considered medically necessary. (E.g., once AlloMap candidacy is established, it is expected that EMB will only be performed as a confirmatory procedure for threshold scores > 34 or when a clinical rationale can be substantiated).

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[1] For the purposes of this guideline, AMR with associated hemodynamic compromise is defined as any:
1. LVEF ≤ 30% (or at least 25% < baseline value).
2. Cardiac index < 2.0 l/min/m2 or 3.
3. The use of inotropic agents to support circulation.

4. AlloMap is not suitable when any of the following clinical situations are applicable and is therefore deemed not medically necessary:
    a. Signs of declining graft function; e.g.:
    b. Rejection therapy for ≥ Grade 2R within prior 2 months.
    c. Major changes in immunosuppression therapy within prior 30 days (e.g., discontinuation of calcineurin inhibitors, switch from mycophenolate mofetil to sirolimus or vice versa).
    d. Treatment with hematopoietic growth factors (e.g., Neupogen, Epogen) currently or within prior 30 days.
    e. Treatment with prednisone equivalent corticosteroids of ≥ 20 mg/day.
    f. Blood transfusion within prior 30 days.
    g. Receiving dialysis (hemodialysis or peritoneal dialysis).

Applicable Procedure Codes

81595	Cardiology (heart transplant), mRNA, gene expression profiling by real-time quantitative PCR of 20 genes (11 content and 9 housekeeping), utilizing subfraction of peripheral blood, algorithm reported as a rejection risk score

Applicable ICD-10 Diagnosis Codes

T86.20	Unspecified complication of heart transplant
T86.21	Heart transplant rejection
T86.22	Heart transplant failure
T86.23	Heart transplant infection
T86.290	Cardiac allograft vasculopathy
T86.298	Other complications of heart transplant
T86.30	Unspecified complication of heart-lung transplant
T86.31	Heart-lung transplant rejection
T86.32	Heart-lung transplant failure
T86.33	Heart-lung transplant infection
T86.39	Other complications of heart-lung transplant
Z94.1	Heart transplant status
Z94.3	Heart and lungs transplant status

References

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