MedStar Health, Inc.
POLICY AND PROCEDURE MANUAL

Policy Number: MP.100.MH
Last Review Date: 02/04/2016
Effective Date: 03/01/2016
Renewal Date: 02/01/2017

MP.007.MH – AlloMap Molecular Expression Test

This policy applies to the following lines of business:
- ✓ MedStar Employee (Select)
- ✓ MedStar MA – DSNP – CSNP
- ✓ MedStar CareFirst PPO

MedStar Health considers AlloMap Molecular Expression Test medically necessary for the following indications:

AlloMap® Molecular Expression Test is medically necessary when all of the following criteria are met:
1. Patient has clinically stable cardiac graft function meeting all of the following criteria:
   - No clinical signs or symptoms of graft dysfunction or heart failure
   - Left ventricular ejection fraction is > 40%
   - Cardiac Index is greater than 2 L/min
   - No history of grade 2R or greater acute cellular rejection (predominantly T-cell mediated) within the previous 6 months
   - No history of antibody-mediated (predominantly B-cell mediated) rejection within the previous 6 months
2. Patient must be 15 years of age or older
3. Patient is not pregnant
4. Patient is six months or greater from the time of the heart transplant
5. Patient is in an outpatient setting
6. There are no limitations or exclusions as listed below

NOTED EXCEPTION - To six months or greater post heart transplant:
Early testing consideration (between two and six months post-transplant) may be given on a **case by case** basis for patients otherwise meeting testing indications, upon documentation and discussion with the treating cardiologist/transplant surgeon for special circumstances including but not limited to:
- Difficult vascular access
- Intolerance to EMB
- Inability to pass the biotome into the right ventricle
- Chronic anticoagulation with high risk of interruption/Lovenox bridging required for EMB

- AlloMap® concurrent with EMB to establish a reference for trending acute rejection in anticipation of future limitations for EMB

Limitations

1. Patient is less than two months post-transplant
2. Patient is between two and six months post-transplant without documented indications for consideration of early AlloMap® testing as described above
3. Patient is less than 15 years old
4. The patient is in a hospital or long-term acute care inpatient setting
5. Patient is unwilling to have an EMB if indicated
6. There are signs and symptoms of acute cellular rejection or declining graft function
7. There is a history of grade 2R or greater acute cellular rejection and/or antibody mediated rejection within the preceding 6 months
8. Patient is pregnant
9. Patient has had multi-organ transplants
10. There has been immunosuppressive treatment for acute rejection or other reasons within the past 21 days including:
    - Myeloablative or myelosuppressive therapy
    - High-dose IV steroids
    - Oral steroids with prednisone or equivalent dosage dose $\geq$ 20 mg/day
11. Blood products given within the past 30 days
12. Bone marrow stimulating products given within the past 30 days including but not limited to:
    - Filgrastim (Neupogen), pegfilgastrim (Neulasta), sagromostin (Leukine)
    - Epoetin Alfa (Procrit, Epogen), Darbepoetin Alfa (Aranesp), and Peginesatide (Omontys)
13. Patients in whom surveillance biopsies would not be performed by current protocol (e.g., those who are stable and over three years post-transplant)
14. Patients with 3 Allomap® scores over 34 and did not show rejection on any of the follow-up EMBs, and it is deemed that further Allomap® testing is not warranted

Background

The most recent statistics reveal that approximately 3,500 people undergo heart transplantation every year worldwide. Out of this group, nearly 40% of the recipients experienced at least one episode of rejection during the first year after transplantation. Monitoring for acute cellular rejection is critical since reversal depends on early and accurate identification and treatment. Acute cellular rejection (ACR) is the most common complication following heart transplantation and is a major cause of graft failure.

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Endomyocardial biopsy (EMB) is the gold standard for rejection monitoring, but is invasive and may only detect rejection after significant myocyte damage has occurred. AlloMap® Molecular Expression Testing was developed by XDx Expression Diagnostics and Food and Drug Administration (FDA)-approved as test for early rejection surveillance. It was first introduced in January 2005 for clinical use It is intended for non-invasive monitoring of patients post-heart transplant in conjunction with standard clinical evaluation.

AlloMap® test translates the complex signals of the immune system's multiple genes and pathways, specifically those associated with heart transplant ACR, into an objective, actionable score.

AlloMap® was FDA approved for use after 2 months post-transplant however; clinical trials only included patients > 6 months post-transplant. Consequently, utility of the test between 2 and 6 months is unproven and remains unclear.

According to the ISHLT Guidelines for care of heart transplant recipients: Gene Expression Profiling (Allomap) can be used to rule out the presence of ACR of grade 2R or greater in appropriate low-risk patients, between 6 months and 5 years after HT. Level of Evidence: B.

Codes:

CPT Codes / HCPCS Codes / ICD-10 Codes	
Code	Description
CPT codes	
86849	*Unlisted immunology procedure*
ICD-9 codes covered if selection criteria are met:	
996.83	*Complications of transplanted organ, heart*
V42.1	*Organ or tissue replaced by transplant, heart*
V58.44	*Aftercare following organ transplant*
ICD-10 codes covered if selection criteria are met:	
T86.20-T86.298	*Complications of heart transplant*
Z48.21	*Encounter for aftercare following heart transplant*
Z94.1	*Heart transplant status*

References

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Task Force 2: Immunosuppression and Rejection. July 26, 2010. https://www.ishlt.org/ContentDocuments/ISHLT_GL_Task_Force_2_080510.pdf

11. XDx Expression Diagnostics: AlloMap® Testing, ©2004-2012; http://www.allomap.com/healthcare.html

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