Medical Policy

Blue Cross Blue Shield Blue Care Network of Michigan

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Joint Medical Policies are a source for BCBSM and BCN medical policy information only. These documents are not to be used to determine benefits or reimbursement. Please reference the appropriate certificate or contract for benefit information.

Category: Surgery
Current Policy Effective Date: 09/01/07

Title: Transplantation for the Treatment of Parkinson's Disease

Procedure Code(s): S2103

Description / Background

Parkinson's disease (PD) is a progressive neurodegenerative disorder associated with a loss of dopaminergic nigrostriatal neurons in the mid-brain. Cardinal features include resting tremor, rigidity, bradykinesia and postural instability. Diagnosis is usually based on history and physical findings.

Neuropathic findings in PD include the loss of pigmented dopaminergic neurons in the substantia nigra. Approximately 60-80% of dopaminergic neurons are lost before clinical symptoms of PD become apparent.

The goal in the treatment of Parkinson's disease is to provide control of symptoms for as long as possible while minimizing adverse effects. Currently, dopamine replacement is considered the most effective treatment but dopamine agonists formerly prescribed as adjunct therapy are now emerging as an initial therapy option. Medications may provide good symptom control for several years. Despite appropriate medical management, the disability associated with PD will progress.

Surgery, such as thalamotomy and pallidotomy may improve the symptoms of PD but may cause neurologic complications. Deep brain stimulation has become an accepted alternative when medical management response is no longer therapeutic.

(*See policy history boxes for any previous effective dates, if applicable)

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Tissue transplantation (autologous and allogeneic) is being investigated as a treatment for Parkinson's disease. Attempts have been made to replace missing neurotransmitters with cells capable of producing dopamine from the adrenal medulla, fetal neurons or genetically engineered cells. This intervention is intended to ameliorate the motor and postural symptoms of PD. Adrenal-to-brain transplants involve either autograft or fetal allograft transplants.

Autologous transplantation involves cell replacement therapy using the patient's own adrenal medullary tissue. Adrenal medullary tissue is usually implanted in fragments into the caudate nucleus at the margin of the lateral ventricle, so that the tissue is exposed to cerebrospinal fluid. The therapeutic idea originated from the belief that sufficient amounts of dopamine could be produced by such intracerebral grafts thereby compensating for the loss of this neurotransmitter. General consensus is that the benefits of adrenal tissue implant do not justify the risks.

Allograft transplantation entails the implantation of fetal neurons to replace the dead neurons at the affected synapses and produce necessary neurotransmitters. Minute amounts of implanted immature human dopamine cells from aborted fetuses may then grow and reduce symptoms. Embryonic mesencephalic tissue containing dopamine-producing cells can be injected into a desired brain location. The effects of cellular projections to other areas of the brain, particularly the basal ganglia, seem to be of most clinical relevance. The results of fetal tissue implantation in patients with PD have been inconsistent.

CPT / HCPCS Level II Codes and Description *(Note: The inclusion of a code in this list is not a guarantee of coverage. Please refer to the medical policy statement to determine the status of a given procedure)*

Established codes:
N/A

Other codes (investigational, not medically necessary, etc.):
S2103 Adrenal tissue transplant to brain

Diagnoses / Medical Conditions

Parkinson's disease

Medical Policy Statement

Transplantation for the treatment of Parkinson's disease, either autologous or allogeneic, is experimental/investigational. Its safety and effectiveness have not been proven.

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Rationale

The findings from current peer-reviewed clinical literature have been insufficient to prove that the safety or effectiveness of transplantation for the treatment of Parkinson's disease, either allogeneic or autologous, is equal to or better than current treatments for Parkinson's disease.

Medical Policy Position Summary (Non-clinical summary statement for customer use)

Parkinson's disease (PD) is degeneration of the nerve tissue associated with a loss of dopamine in certain nerve endings of the mid-brain. Symptoms of PD include resting tremor, rigidity, slow movements and loss of balance. Autologous transplant is a procedure where cells from a patients' own adrenal gland are implanted into the mid-brain in an attempt to become dopamine-producing cells. Allograft transplants involve the transplantation of neurons from fetal midbrain tissue that contain dopamine-producing cells in an attempt to replace the lost dopamine cells in the PD patient. Current clinical studies have not shown either of these procedures to be consistently effective in replacing the lost dopamine cells in patients with PD.

Inclusionary and Exclusionary Guidelines (Clinically based guidelines that may support individual consideration and pre-authorization decisions)

N/A

Related Policies

Deep Brain Stimulation for the Treatment of Parkinson's disease

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Medicare Information

There is no national or local Medicare policy that addresses transplantation for the treatment Parkinson's disease. S2103 is non-covered by Medicare.

(The above Medicare information is current as of the review date for this policy. However, the coverage issues and policies maintained by the Centers for Medicare & Medicare Services [CMS, formerly HCFA] are updated and/or revised periodically. Therefore, the most current CMS information may not be contained in this document. For the most current information, the reader should contact an official Medicare source.)

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References

- Blue Cross Blue Shield Association (BCBSA), "Adrenal-to-Brain Transplantation," *Medical Policy Reference Manual*, Policy # 7.01.43, Issue 2:2003, Original Policy Date 3/31/96, Last Review Date 07/17/03, No further review scheduled.
- Blue Cross Blue Shield Association (BCBSA), "Embryonic Mesencephalic Transplantation of the Treatment of Parkinson's Disease," *Medical Policy Reference Manual*, Policy # 7.01.10, Issue # 1:2003, Original Policy Date 12/1/95, Last Review Status/Date 2:2005, No further review scheduled.
- Greene, P. E., MD, Fahn, S., MD, "Status of Fetal Tissue Transplantation for the Treatment of Advanced Parkinson's Disease*, Neurosurgery Focus*, Vol. 13, No. 5, 11/01/2002, retrieved from www.medscape.com
- Lang, Anthony, E., Obeso, Jose A., "Challenges in Parkinson's Disease: restoration of the nigrostriatal dopamine system is not enough," *The Lancet Neurology*, Vol. 3, No. 54, May 2004.
- Schapira, Anthony, HV, "Disease modification in Parkinson's Disease," *The Lancet Neurology*," Vol. 3, No. 6, June 2004.
- Walter, Benjamin L., Vitek, Jerrold L., "Surgical treatment for Parkinson's Disease," *The Lancet Neurology*, Vol. 3, No. 12, December 2004.

The articles reviewed in this research include those obtained in an Internet based literature search for relevant medical references through April 12, 2007, the date the research was completed.

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Joint BCBSM/BCN Medical Policy History

Policy Effective Date	BCBSM Signature Date	BCN Signature Date	Comments
04/15/02	04/15/02	04/15/02	Joint policy established
09/22/03	09/22/03	10/03/03	Routine maintenance (policy renamed from "Adrenal to Brain Transplant for Parkinson's Disease)
01/25/05	01/25/05	01/25/05	Routine maintenance
09/01/06	7/10/06	05/23/06	Routine maintenance
09/01/07	7/3/07	08/29/07	Routine maintenance; policy retired

Next Review: This policy is obsolete and no longer subject to regular review.

Pre-Consolidation Medical Policy History

Original Policy Date	Comments
BCN: N/A	Revised: N/A
BCBSM: 1/26/96	Revised: 12/15/00

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BLUE CARE NETWORK
POLICY: TRANSPLANTATION FOR THE TREATMENT OF PARKINSON'S DISEASE

I. Coverage Determination:

BCN does not cover transplantation either autologous or allogeneic for the treatment of Parkinson's disease. The safety and effectiveness of this procedure have not been proven. Benefits are not provided for care, services, supplies, devices, drugs or procedures that are experimental or research in nature.

II. Benefit Information:

N/A

III. Benefit Exclusions:

N/A

IV. Administrative Guidelines:

N/A

V. Effective Date:

Policy updated: 09/01/06, 9/22/03, 1/1/25/05, 9/1/07
Joint policy effective date: 4/15/02
Supersedes benefit information of: N/A

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