MASSACHUSETTS

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Medical Policy

Adrenal-to-Brain Transplantation

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Policy Number: 627

BCBSA Reference Number: 7.01.43A (For Plan internal use only)
NCD/LCD: NA

Related Policies

Deep brain stimulation for Parkinson's tremor, #473

Policy

Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue[SM] and Medicare PPO Blue[SM] Members

Adrenal-to-brain transplantation with autograft or fetal allograft is **INVESTIGATIONAL**.

Prior Authorization Information

Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

	Outpatient
Commercial Managed Care (HMO and POS)	This is **not** a covered service.
Commercial PPO and Indemnity	This is **not** a covered service.
Medicare HMO Blue[SM]	This is **not** a covered service.
Medicare PPO Blue[SM]	This is **not** a covered service.

CPT Codes / HCPCS Codes / ICD Codes

Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

CPT Codes
There is no specific CPT code for this service.

HCPCS Codes

HCPCS codes:	Code Description
S2103	Adrenal tissue transplant to brain

Description
Parkinson's disease is a degenerative disease that includes symptoms of resting tremor, rigidity, and bradykinesia. The condition usually appears after age 40 years and progresses slowly over many years. Drug treatment with levodopa can usually restore smooth motor function for up to 5–10 years after onset of Parkinson's disease by permitting surviving dopaminergic cells to bypass a rate-limiting enzyme, tyrosine hydroxylase, and thus produce enough dopamine to maintain adequate motor function. Eventually, more dopaminergic cells die, leading to progressive disability.

The transplantation of adrenal medullary tissue to the corpus striatum is intended to ameliorate the motor and postural dysfunctions of Parkinson's disease. Striatal dopamine is depleted in Parkinson's disease patients. The rational for the procedure is that adrenal tissue may restore dopamine activity in the corpus striatum. Adrenal-to-brain transplantation can involve either autografts or fetal allografts.

Autotransplantation entails simultaneous adrenalectomy and craniotomy with subsequent implantation of adrenal medullary tissue. Adrenal tissue is usually implanted in fragments into the caudate nucleus at the margin of the lateral ventricle, such that the tissue is exposed to cerebrospinal fluid (CSF). Tissue fragments can be anchored in place with surgical staples or with Gelfoam®. Besides the caudate nucleus, the putamen has also been used as an implantation site. Open microsurgical insertion of the tissue has been used in addition to stereotactic localization and implantation using a cannula.

Allografting involves harvesting adrenal tissue from an aborted fetus. The surgical techniques are the same as autotransplantation, with the exception of the adrenalectomy.

Summary
The medical literature regarding adrenal-to-brain transplantation for the treatment of Parkinson's disease is limited to the description of uncontrolled, short-term studies with small sample sizes or case studies. Although some of these studies did report finding significant clinical improvements, unreasonably high morbidity and mortality rates are frequent. A few pathologic reports on adrenal-to-brain recipients demonstrated very few to no surviving transplanted cells after 6 months to a year following surgery. Due to the lack of long-term outcomes data for large controlled randomized trials and reports of high rates of complications and death in the existing literature, the American Academy of Neurology concluded that adrenal-to-brain transplantation for the treatment of Parkinson's disease should be considered unacceptable for safety reasons. For these reasons, the procedure is considered investigational.

Policy History

Date	Action
3/2020	Policy updated with literature review through March 1, 2020, no references added. Policy statements unchanged.
11/2011-4/2012	Medical policy ICD 10 remediation: Formatting, editing and coding updates. No changes to policy statements.
1/2012	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.
1/2011	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.
1/2010	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.

1/2009	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.
1/2008	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.
1/2007	Reviewed - Medical Policy Group - Neurology and Neurosurgery. No changes to policy statements.

Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:
Medical Policy Terms of Use
Managed Care Guidelines
Indemnity/PPO Guidelines
Clinical Exception Process
Medical Technology Assessment Guidelines

References

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12. Schwarz J, Schwarz SC, Storch A. Developmental perspectives on human midbrain-derived neural stem cells. Neurodegener Dis. 2006; 3(1-2):45-49.