Pulmonary Artery Denervation (PADN) - Single Service

Clinical Guidelines for Medical Necessity Review

Version: 2
Effective Date: April 26, 2024

Important Notices

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Guideline Information:

Specialty Area: Cardiovascular Disease
Guideline Name: Pulmonary Artery Denervation (PADN) - Single Service

Literature review current through: 9/21/2023
Document last updated: 4/26/2024
Type: [**X**] Adult (18+ yo) | [_] Pediatric (0-17yo)

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Medical Necessity Criteria

Service: Pulmonary Artery Denervation (PADN)

General Guidelines

- **Units, Frequency, & Duration:** The service is unproven and not medically necessary.
- **Criteria for Subsequent Requests:** The service is unproven and not medically necessary.
- **Recommended Clinical Approach:** Pulmonary artery denervation (PADN) is a catheter based procedure to reduce pulmonary artery pressure in patients with pulmonary arterial hypertension (PAH). The most common method of PADN is catheter-directed thermal ablation.
- **Exclusions:** None.

Medical Necessity Criteria

Indications

➔ **Pulmonary Artery Denervation (PADN)** is considered appropriate if **ALL** of the following are **TRUE**:[1-4]

- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of their effectiveness for these indications.

Non-Indications

➔ **Pulmonary Artery Denervation (PADN)** is not considered appropriate if **ALL** of the following are **TRUE**:[1-4]

- ◆ This procedure is unproven and not medically necessary. There is insufficient evidence of their effectiveness for these indications.

Level of Care Criteria

Inpatient.

Procedure Codes (CPT/HCPCS)

CPT/HCPCS Codes	Code Description
0793T	Percutaneous transcatheter thermal ablation of nerves innervating the pulmonary arteries, including right heart catheterization, pulmonary artery

	angiography, and all imaging guidance
0632T	Percutaneous transcatheter ultrasound ablation of nerves innervating the pulmonary arteries, including right heart catheterization, pulmonary artery angiography, and all imaging guidance

Medical Evidence

Zhang et al. (2022) performed a randomized control trial (RCT) to evaluate the efficacy of pulmonary artery denervation (PADN) for patients with group 1 pulmonary arterial hypertension (PAH) not on baseline medications. A total of 128 patients were included. The study was conducted in China. At six-month follow-up, patients reported improved exercise capacity, hemodynamic status, and clinical outcomes. Additional studies are needed to determine long-term outcomes of PADN for the population.[1]

Davies et al. (2022) and Xie et al. (2022) also note the potential of PADN as a treatment for patients with PH and PAH; however, additional research is needed .[2-3]

National and Professional Organizations

The **European Society of Cardiology (ESC) and the European Respiratory Society (ERS)** published guidelines for the *Diagnosis and Treatment of Pulmonary Hypertension (PH)*. A lack of evidence exists from RCTs regarding the efficacy of PADN for the treatment of PH. The guidelines are endorsed by the **International Society for Heart and Lung Transplantation (ISHLT)** and the **European Reference Network on Rare Respiratory Diseases (ERN-LUNG).**[4]

References

1. Zhang H, Wei Y, Zhang C, et al. Pulmonary artery denervation for pulmonary arterial hypertension: A sham-controlled randomized PADN-CFDA trial. JACC Cardiovasc Interv. 2022 Dec 12;15(23):2412-2423. doi: 10.1016/j.jcin.2022.09.013. PMID: 36121246.
2. Davies MG, Miserlis D, Hart JP. Current status of pulmonary artery denervation. Front Cardiovasc Med. 2022 Oct 3;9:972256. doi: 10.3389/fcvm.2022.972256. PMID: 36262207; PMCID: PMC9573987.
3. Xie Y, Liu N, Xiao Z, et al. The progress of pulmonary artery denervation. Cardiol J. 2022;29(3):381-387. doi: 10.5603/CJ.a2020.0186. PMID: 33438182; PMCID: PMC9170319.
4. Humbert M, Kovacs G, Hoeper MM, et al. 2022 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension. Eur Respir J. 2023 Jan 6;61(1):2200879. doi: 10.1183/13993003.00879-2022. PMID: 36028254.

Clinical Guideline Revision History/Information

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