

Bölüm 29

PULMONER ARTERYEL HİPERTANSİYON TEDAVİSİNDE PULMONER ARTER DENERVASYONU

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GİRİŞ

Pulmoner hipertansiyonun hemodinamik tanımı; 2018'de Nice şehrinde düzenlenen 6. Dünya Pulmoner Hipertansiyon Sempozyumu'nda değiştirilmiş olup istirahatte ortalama pulmoner arter basıncının 20 mmHg ve üzerinde olması pulmoner hipertansiyon olarak tanımlanmıştır. Pulmoner kapiller kama basıncının 15 mmHg değerinin üzerinde olması; post-kapiller pulmoner hipertansiyon olarak adlandırılmış ve pulmoner vasküler rezistansın 3 Woods ünitesi ve üzerinde olmasının pre-kapiller pulmoner hipertansiyonun da varlığı anlamına geldiği belirtilmiştir (1). Avrupa Kardiyoloji Cemiyeti Pulmoner Hipertansiyon kılavuzuna göre klinik olarak pulmoner hipertansiyon 5 alt grupta sınıflandırılmaktadır; (2).

1. Grup 1 Pulmoner Hipertansiyon: Pulmoner arteryel hipertansiyon
2. Grup 2 Pulmoner Hipertansiyon: Sol kalp patolojilerine sekonder gelişen pulmoner hipertansiyon
3. Grup 3 Pulmoner Hipertansiyon: Hipoksi ve pulmoner hastalıklara sekonder gelişen pulmoner hipertansiyon
4. Grup 4 Pulmoner Hipertansiyon: Kronik tromboembolik pulmoner hipertansiyon ve pulmoner vaskülitler
5. Grup 5 Pulmoner Hipertansiyon: Çoklu etyolojik nedene bağlı gelişen pulmoner hipertansiyon

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SONUÇ

Pulmoner arter denervasyonu; pulmoner hipertansiyon tedavisinde ümit vaat eden yeni bir tedavi yöntemidir. Hayvan çalışmalarında ve küçük çaplı insanlar üzerinde yapılan çalışmalarda güvenli bir işlem olduğu gösterilmiştir. Pulmoner arter denervasyonunun pulmoner vasküler hemodinamik parameteler ve 6 dakika yürüme testi üzerine olumlu etkileri olduğunu tespit eden çalışmalar mevcut olsa da; pulmoner hipertansiyon tedavisinde standart bir tedavi olarak yer alması için büyük ölçekli randomize çalışmalara ihtiyaç vardır.

KAYNAKLAR

1. Hooper MM, Humbert M. The new haemodynamic definition of pulmonary hypertension: evidence prevails, finally! *Eur Respir J*. 2019 Mar 28;53(3):1900038.
2. Galiè N, Humbert M, Vachiery JL, et al. 2015 ESC/ERS Guidelines for the diagnosis and treatment of pulmonary hypertension: The Joint Task Force for the Diagnosis and Treatment of Pulmonary Hypertension of the European Society of Cardiology (ESC) and the European Respiratory Society (ERS): Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC), International Society for Heart and Lung Transplantation (ISHLT). *Eur Respir J*. 2015 Oct;46(4):903-75.
3. Galie' N, Ussia G, Passarelli P, Parlangeli R, Branzi A, Magnani B. Role of pharmacologic tests in the treatment of primary pulmonary hypertension. *Am J Cardiol* 1995;75:55A-62A.
4. McLaughlin VV, Shah SJ, Souza R, Humbert M. Management of pulmonary arterial hypertension. *J Am Coll Cardiol* no;65(18):1976-97
5. Kerstein D, Levy PS, Hsu DT, Hordof AJ, Gersony WM, Barst RJ. Blade balloon atrial septostomy in patients with severe primary pulmonary hypertension. *Circulation* 1995 Apr 1;91(7):2028-35.
6. Blanc J, Vouhé P, Bonnet D. Potts shunt in patients with pulmonary hypertension. *N Engl J Med* 2004 Feb 5;350(6):623.
7. Barnes PJ, Liu SF. Regulation of pulmonary vascular tone. *Pharmacol Rev* no;47(1):87-131. [27] Richardson JB. Nerve supply to the lungs. *Am Rev Respir Dis* no;119(5):785-802.
8. Richardson JB. Nerve supply to the lungs. *Am Rev Respir Dis* no;119(5):785-802.
9. Kai Y. Study on the distribution of sympathetic nerves in the lung using the Falck-Hillarp's fluorescent method. *Bull Chest Dis Res Inst Kyoto Univ* no;2(2):225-45 passim.
10. Carstairs JR, Nimmo AJ, Barnes PJ. Autoradiographic visualization of beta-adrenoceptor subtypes in human lung. *Am Rev Respir Dis* no;132(3):541-7.
11. Constantine A, Dimopoulos K. Pulmonary artery denervation for pulmonary arterial hypertension. *Trends Cardiovasc Med*. 2020 May 12:S1050-1738(20)30059-1.
12. Osorio J, Russek M. Reflex changes on the pulmonary and systemic pressures elicited by stimulation of baroreceptors in the pulmonary artery. *Circ Res* no;10:664-7.

13. de Man FS, Handoko ML, Guignabert C, Bogaard HJ, Vonk-Noordegraaf A. Neurohormonal axis in patients with pulmonary arterial hypertension. *Am J Respir Crit Care Med* no;187(1):14–19.
14. Juratsch CE, Jengo JA, Castagna J, Laks MM. Experimental pulmonary hypertension produced by surgical and chemical denervation of the pulmonary vasculature. *Chest* no;77(4):525–30.
15. Zhou L, Zhang J, Jiang X-M, et al. Pulmonary artery denervation attenuates pulmonary arterial remodeling in dogs with pulmonary arterial hypertension induced by dehydrogenized monocrotaline. *JACC Cardiovasc Interv* no;8(15):2013–23.
16. Rothman AMK, Arnold ND, Chang W, et al. Pulmonary artery denervation reduces pulmonary artery pressure and induces histological changes in an acute porcine model of pulmonary hypertension. *Circ Cardiovasc Interv* no;8(11):e002569.
17. Garcia-Lunar I, Pereda D, Santiago E, et al. Effect of pulmonary artery denervation in postcapillary pulmonary hypertension: results of a randomized controlled translational study. *Basic Res Cardiol* 2019;114(2):5 11.
18. Chen S-L , Zhang F-F , Xu J , et al. Pulmonary artery denervation to treat pulmonary arterial hypertension: the single-center, prospective, first-in-man PADN-1 study (first-in-man pulmonary artery denervation for treatment of pulmonary artery hypertension). *J Am Coll Cardiol* 2013 Sep 17;62(12):1092–100 .
19. Chen S-L , Zhang H , Xie D-J, et al. Hemodynamic, functional, and clinical responses to pulmonary artery denervation in patients with pulmonary arterial hypertension of different causes: phase II results from the Pulmonary Artery Denervation-1 study. *Circ Cardiovasc Interv* no;8(11):e002837 .
20. Rothman AMK, Vachiery JL, Howard L, et al. Pulmonary artery denervation for the treatment of pulmonary arterial hypertension: preliminary results of the TROPHY 1 Study. *Eur Heart J* [Internet] no;39(suppl_1). [cited 2019 Nov 26] Available from:https://academic.oup.com/eurheartj/article/39/suppl_1/ehy564.P567/5081677.
21. Zhang H , Zhang J , Chen M , et al. Pulmonary artery denervation significantly increases 6-min walk distance for patients with combined pre- and post-capillary pulmonary hypertension associated with left heart failure: the PADN-5 study. *JACC Cardiovasc Interv* no;12(3):274–84 .
22. B. Rudenko, A. Shanoyan, O. Drapkina, et al. Simplicity Denervation System for Pulmonary Artery Denervation in Patients with Residual Pulmonary Hypertension after Pulmonary Thromboembolism and Surgical Thrombectomy *Cardiology and Cardiovascular Medicine - http://www.cardiolcardiovascm.com/ - Vol. 1 No. 5 - Oct 2017. [ISSN 2572-9292]*