

# 19. Bölüm

## HİPERSENSİTİVİTE PNÖMONİSİ

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### GİRİŞ

Hipersensitivite Pnömonisi (HSP); duyarlı erişkinlerde tespit edilmiş ya da edilememiş bir faktöre maruziyet sonrası gelişen, interstisyel akciğer hastalıkları (İAH) içerisinde yer alan, inflamatuvar ve/veya fibrotik bir sürecin işlediği, akciğer parankimi ve küçük havayollarını etkileyen, tipik bir immünite-kaynaklı hastalıktır<sup>(1)</sup>. Şimdiye kadar birçok farklı tanım geliştirmiştir; ancak uluslararası grupların çabasına rağmen kesinleşmiş bir tanısal kriter ve yaklaşım belirlenmemiştir<sup>(2,3)</sup>.

HSP daha önce 'ekstremsk alerjik alveolit' olarak tanımlanmış ve akut/subakut/kronik olarak sınıflandırılmıştır. Ancak bu yaklaşım ile sınıflandırma ve tanımlama kolay olmayıp bazı çalışmalarda keyfi değişkenlik göstermiştir. Bu nedenle ATS (American Thoracic Society), JRS (Japanese Respiratory Society) ve ALAT (Asociación Latinoamericana del Tórax)'ın 2020 de ortak olarak yayınladıkları HSP rehberinde<sup>(4)</sup>; prognozun en önemli belirteci histolojik ve radyolojik fibrozis olduğu için sınıflama fibrotik ya da nonfibrotik olarak yapılmıştır. Bazı hastalarda her iki görünüm olması durumunda, baskın olan görüntü sınıflamada tercih edilmiştir.

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dengeşizlik ve persistan inflamasyon durumunda ortaya çıkmaktadır. Hastalığın farklı formları olmakla birlikte en sık sebepler; çalışma ortamı, yaşam alanı ya da rekreasyonel aktiviteler kaynaklı bakteri, protein, mantar, mikobakteri inhalasyonlarıdır. Tanı potansiyel antijen kaynaklarının belirlenmesine dayanmaktadır. Antijen ile temasın sonlandırılması tedavinin temel prensibidir.

## KAYNAKLAR

1. Lacasse Y, Selman M, Costabel U, et al. HP Study Group. Clinical diagnosis of hypersensitivity pneumonitis. *Am J Respir Crit Care Med* 2003;168:952–958.
2. Elicker BM, Jones KD, Henry TS, et al. Multidisciplinary approach to hypersensitivity pneumonitis. *J Thorac Imaging* 2016;31:92–103.
3. Johannson KA, Elicker BM, Vittinghoff E, et al. A diagnostic model for chronic hypersensitivity pneumonitis. *Thorax* 2016;71:951–954.
4. Raghu G, Remy-Jardin M, Ryerson CJ, et al. Diagnosis of Hypersensitivity Pneumonitis in Adults An Official ATS/JRS/ALAT Clinical Practice Guideline American Journal of Respiratory and Critical Care Medicine Volume 202 Number 3 August 1 2020
5. Hanak V, Golbin JM, Ryu JH. Causes and presenting features in 85 consecutive patients with hypersensitivity pneumonitis. *Mayo Clin Proc* 2007;82:812–816.
6. Fernandez Pe rez ER, Swigris JJ, Forsse n AV, et al. Identifying an inciting antigen is associated with improved survival in patients with chronic hypersensitivity pneumonitis. *Chest* 2013;144:1644–1651.
7. Walters GI, Mokhlis JM, Moore VC, et al. Characteristics of hypersensitivity pneumonitis diagnosed by interstitial and occupational lung disease multi-disciplinary team consensus. *Respir Med* 2019;155:19–25.
8. Campbell J. Acute symptoms following work with hay. *Brit Med J.* 1932;2:1143–4.
9. Bringham LS, Byrne RN, Gershon-Cohen J. Respiratory dis-ease of mushroom workers; farmer's lung. *J Am Med Assoc.* 1959;171:15---8.
10. Pearsall HR, Morgan EH, Tesluk H, et al. Pareket danderpneumonitis: acute psitacokera-to-pneumoconiosis, report of acase. *Bull Mason Clin.* 1960;14:127---37
11. Fernandez Pe rez ER, Kong AM, Raimundo K, et al. Epidemiology of hypersensitivity pneumonitis among an insured population in the United States: a claims-based cohort analysis. *Ann Am Thorac Soc* 2018;15:460–469.
12. Buchvald F, Petersen BL, Damgaard K, et al. Frequency, treatment, and functional outcome in children with hypersensitivity pneumonitis. *Pediatr Pulmonol* 2011;46:1098–1107.
13. Coultas DB, Zumwalt RE, Black WC, et al. The epidemiology of interstitial lung diseases. *Am J Respir Crit Care Med* 1994;150: 967–972.
14. Morell F, Villar A, Ojanguren I, et al. Hypersensitivity pneumonitis and (idiopathic) pulmonary fibrosis due to feather duvets and pillows *Arch Bronconeumol* 11 Feb 2020; DOI:10.1016/j.arbres.2019.12.003.
15. Thomeer MJ, Costabe U, Rizzato G, et al. Comparison of registries of interstitial lung diseases in three European countries. *Eur Respir J Suppl* 2001;32:114s–118s.
16. Singh S, Collins BF, Sharma BB, et al. Interstitial lung disease (ILD) in India: results of a prospective registry. *Am J Respir Crit Care Med* 2017;195:801–813.
17. 2020 May 4. PFF patient registry. Chicago, IL: Pulmonary Fibrosis Foundation <https://www.pulmonaryfibrosis.org/medical-community/pff-patient-registry>

18. Rose CS, Martyny JW, Newman LS, et al. "Lifeguard lung": endemic granulomatous pneumonitis in an indoor swimming pool. *Am J Public Health* 1998;88:1795–1800.
19. Simpson C, Garabrant D, Torrey S, et al. Hypersensitivity pneumonitis-like reaction and occupational asthma associated with 1,3-bis(isocyanatomethyl) cyclohexane pre-polymer. *Am J Ind Med* 1996;30:48–55.
20. Ganier M, Lieberman P, Fink J, et al. Humidifier lung: an outbreak in office workers. *Chest* 1980;77:183–187.
21. Banaszak EF, Thiede WH, Fink JN. Hypersensitivity pneumonitis due to contamination of an air conditioner. *N Engl J Med* 1970;283:271–276.
22. Blanchet MR, Israël-Assayag E, Cormier Y. Inhibitory effect of nicotine on experimental hypersensitivity pneumonitis in vivo and in vitro. *Am J Respir Crit Care Med.* 2004;169:903-9.
23. Ohtsuka Y, Munakata M, Tanimura K, et al. Smoking promotes insidious and chronic farmer's lung disease, and deteriorates the clinical outcome. *Intern Med.*1995;34:966-71.
24. Selman M, Pardo A, King TE Jr. Hypersensitivity pneumonitis: insights in diagnosis and pathobiology. *Am J Respir Crit Care Med.* 2012;186:314-24.
25. Barrera L, Mendoza F, Zuñiga J, et al. Functional diversity of T-cell subpopulations in subacute and chronic hypersensitivity pneumonitis. *Am J Respir Crit Care Med* 2008;177:44–55.
26. Simonian PL, Roark CL, Wehrmann F, et al. Th17-polarized immune response in a murine model of hypersensitivity pneumonitis and lung fibrosis. *J Immunol* 2009; 182:657–665.
27. García de Alba C, Buendia-Roldán I, Salgado A, Becerril C, et al. Fibrocytes contribute to inflammation and fibrosis in chronic hypersensitivity pneumonitis through paracrine effects. *Am J Respir Crit Care Med* 2015;191:427–436.
28. Barrera L, Mendoza F, Zuñiga J, et al. Functional diversity of T-cell subpopulations in subacute and chronic hypersensitivity pneumonitis. *Am J Respir Crit Care Med.*2008;177:44-55.
29. Simonian PL, Roark CL, Born WK, et al. T cells and Th17 cytokines in hypersensitivity pneumonitis and lung fibrosis. *Transl Res.* 2009;154:222-7.
30. Joshi AD, Fong DJ, Oak SR, et al. Interleukin-17-mediated immunopathogenesis in experimental hypersensitivity pneumonitis. *Am J Respir Crit Care Med.* 2009;179:705-16
31. Adegunsoye A, Oldham JM, Demchuk C, et al. Predictors of survival in coexistent hypersensitivity pneumonitis with autoimmune features. *Respir Med* 2016;114:53–60.
32. Ley B, Newton CA, Arnould I, et al. The MUC5B promoter polymorphism and telomere length in patients with chronic hypersensitivity pneumonitis: an observational cohort-control study. *Lancet Respir Med* 2017;5:639–647.
33. Newton CA, Batra K, Torrealba J, et al. Telomere-related lung fibrosis is diagnostically heterogeneous but uniformly progressive. *Eur Respir J* 2016;48: 1710–1720.
34. Okamoto T, Miyazaki Y, Tomita M, et al. A familial history of pulmonary fibrosis in patients with chronic hypersensitivity pneumonitis. *Respiration* 2013;85:384–390.
35. Bustos ML, Frías S, Ramos S, et al. Local and circulating microchimerism is associated with hypersensitivity pneumonitis. *Am J Respir Crit Care Med* 2007;176: 90–95.
36. Spagnolo P, Rossi G, Cavazza A, et al. Hypersensitivity Pneumonitis: A Comprehensive Review *J Investig Allergol Clin Immunol* 2015; Vol. 25(4): 237-250
37. Mukhopadhyay S, Katzenstein A-L. Pulmonary disease due to aspiration of food and other particulate matter: a clinicopathologic study of 59 cases diagnosed on biopsy or resection specimens. *Am J Surg Pathol* 2007;31:752–759.
38. Khoor A, Leslie KO, Tazelaar HD, et al. Diffuse pulmonary disease caused by nontuberculous mycobacteria in immunocompetent people (hot tub lung). *Am J Clin Pathol* 2001; 115:755–762.
39. Churg A, Müller NL, Silva CI, et al. Acute exacerbation (acute lung injury of unknown cause) in UIP and other forms of fibrotic interstitial pneumonias. *Am J Surg Pathol.* 2007;31:277-84.
40. Morell E, Villar A, Montero MÁ, et al. Chronic hypersensitivity pneumonitis in patients diagnosed with idiopathic pulmonary fibrosis: a prospective case-cohort study. *Lancet Respir Med* 2013;1:685-94.

41. Raghu G, Remy-Jardin M, Myers JL, et al. American Thoracic Society; European Respiratory Society; Japanese Respiratory Society; Latin American Thoracic Society. Diagnosis of idiopathic pulmonary fibrosis: an official ATS/ERS/JRS/ALAT clinical practice guideline. *Am J Respir Crit Care Med* 2018;198:e44–e68
42. Morisset J, Johannson KA, Jones KD, et al. HP Delphi Collaborators. Identification of diagnostic criteria for chronic hypersensitivity pneumonitis: an international modified Delphi survey. *Am J Respir Crit Care Med* 2018;197: 1036–1044.
43. Barnett J, Molyneaux PL, Rawal B, et al. Variable utility of mosaic attenuation to distinguish fibrotic hypersensitivity pneumonitis from idiopathic pulmonary fibrosis. *Eur Respir J* 2019;54:1900531.
44. Casoni GL, Tomassetti S, Cavazza A, et al. Transbronchial lung cryobiopsy in the diagnosis of fibrotic interstitial lung diseases. *PLoS One*. 2014;9:e86716.
45. Lacasse Y, Selman M, Costabel U, et al. HP Study Group. Clinical diagnosis of hypersensitivity pneumonitis. *Am J Respir. Crit Care Med.*2003;168:952-8.
46. Cordeiro CR, Jines JC, Alfaro T, et al. Bronchoalveolar lavage in occupational lung diseases. *Semin Respir Crit Care Med*. 2007;28:504-13.
47. Ohshimo S, Bonella F, Cui A, et al. Significance of bronchoalveolar lavage for the diagnosis of idiopathic pulmonary fibrosis. *Am J Respir Crit Care Med*. 2009;179:1043-7.
48. Cormier Y, Létourneau L, Racine G. Significance of precipitins and asymptomatic lymphocytic alveolitis: a 20-yr follow-up. *Eur Respir J*. 2004;23:523-5.
49. Cormier Y, Belanger J, Durand P. Factors influencing the development of serum precipitins to farmer's lung antigen in Quebec dairy farmers. *Thorax*. 1985;40:138-42.
50. Ohtani Y, Saiki S, Kitaichi M, et al. Chronic bird fancier's lung: histopathological and clinical correlation. An application of the 2002 ATS/ERS consensus classification of the idiopathic interstitial pneumonias. *Thorax*. 2005; 60:665-71.
51. Selman M. Hypersensitivity pneumonitis. *Interstitial lung disease 2011*. p. 597-635. Shelton (CT): People's Medical Publishing House-USA.
52. Moraga-McHaley SA, Landen M, Krapfl H, et al. Hypersensitivity pneumonitis with *Mycobacterium avium* complex among spa workers. *Int J Occup Environ Health*. 2013;19(1):55---61
53. Spagnolo P, Rossi G, Cavazza A, et al. Hypersensitivity Pneumonitis: A Comprehensive Review *J Investig Allergol Clin Immunol* 2015; Vol. 25(4): 237-250