

12. Bölüm

PULMONER VE EKSTRAPULMONER SARKOİDOZ

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GİRİŞ

Sarkoidoz etiyojisi bilinmeyen, histopatolojik olarak nonkazeifiye granülo-matöz inflamasyonla seyreden bir hastalıktır. En çok toraks içi lenf nodlarını ve akciğerleri tutmakla birlikte cilt, göz, kas ve iskelet sistemi, gastrointestinal sistem, sinir sistemi, kalp ve diğer organlar da etkilenebilir.

Epidemiyoloji: Sarkoidoz herkesi etkileyebilse de daha sık görüldüğü toplumlar ve yaş grupları vardır. Hastalığın prevalansı 10-20/100.000, yıllık insidansı ise 1-35,5/100.000 olarak bildirilmektedir. Prevalans, Afrikalı Amerikalılarda beyazlara göre 10 kat daha fazladır. Beyazlar için yaşa göre ayarlanmış insidans, 100.000 nüfus başına 11 vaka, Afrika kökenli Amerikalılar için insidans, 100.000 kişi başına 34 vaka ile oldukça yüksektir. İnsidans, İsveç'te 100.000 kişi başına 20 vaka ve Japonya'da 100.000 nüfus başına 1.3 vakadır. Ülkemizde yapılan epidemiyolojik çalışmada sarkoidozun yıllık insidansı 10000'de 4 olarak hesaplanmıştır.¹

Her yaş grubunda görülürse de daha çok genç erişkinlerin hastalığıdır. İnsidans kadınlarda erkeklerden daha yüksektir. Özellikle kadınlarda 45-65 yaşları arasında ikinci piki yapar.² Hastalık kadınlarda daha ağır seyretmekte olup, mortalite, morbidite ve pulmoner tutulum oranları erkeklere göre daha yüksek

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SONUÇ

Birçok organ ve sistemi etkilenen sarkoidozun klinik sunumları çeşitli olup, klinisyenler için tanı ve yönetimi zordur. Tanı için etkilenen organda sarkoidozla uyumlu klinik ve/veya radyolojik görünüm ile birlikte kazeifiye olmayan granülomun varlığı tek başına yeterli değildir öncelikle granülom oluşumunun diğer olası nedenleri dışlanmalıdır.

KAYNAKÇA

1. Musellim B, Kumbasar OO, Ongen G, et al. (2009). Epidemiological features of Turkish patients with sarcoidosis. *Respir Med.*103: 907-912.
2. English JC 3rd, Patel PJ, Greer KE. et al. *J Am Acad Dermatol* 2001;44:725-743.
3. Krell W, Bourbonnais JM, Kapoor R, et al. Effect of smoking and gender on pulmonary function and clinical features in sarcoidosis. *Lung.* 2012 Oct. 190(5):529-536.
4. de Boer S, Wilsher M. Sarcoidosis. *Chronic Resp Dis* 2010; 7:247-258.
5. Baughman RP, Teirstein AS, Judson MA, et al. Clinical Characteristics of Patients in a Case Control Study of Sarcoidosis. *Am J Respir Crit Care Med* 2001;164:1885-1889.
6. Haimovic A, Sanchez M, Judson MA, et al. Sarcoidosis: a comprehensive review and update for the dermatologist:part I. Cutaneous disease. *J Am Acad Dermatol.*2012;66(5):699.e1-18; quiz 717-718.
7. Hosoda Y, Sasagawa S, Yasuda N. Epidemiology of sarcoidosis: new frontiers to explore. *Curr Opin Pulm Med.* 2002;8:424-428.
8. Sharma OP. Sarcoidosis around the world. *Clin Chest Med.* 2008;29:357-363.
9. Fingerlin TE, Hamzeh N, Maier LA. Genetics of Sarcoidosis. *Clin Chest Med.* 2015;36(4):569-84.
10. Grunewald J, Eklund A. Sex-specific manifestations of Lofgren's syndrome. *American journal of respiratory and critical care medicine.* 2007;175(1):40-44.
11. Dubaniewicz A. Mycobacterium tuberculosis heat shock proteins and autoimmunity in sarcoidosis. *Autoimmun Rev.* 2010;9(6):419-424.
12. Newman LS, Rose CS, Bresnitz EA, et al. A case control etiologic study of sarcoidosis: environmental and occupational risk factors. *American journal of respiratory and critical care medicine.* 2004;170(12):1324-1330.
13. Ianuzzi MC, Rybicki BA, Teirstein AC. Sarcoidosis. *N Engl J Med.* 2007;2153-2165.
14. De Vuyst P, Dumortier P, Schandene L, et al. Sarcoidlike lung granulomatosis induced by aluminum dusts. *Am. Rev. Respir. Dis.* 1987;135(2):493-497.
15. Skelton H G D, Smith K J, Johnson F B, et al. Zirconium granuloma resulting from an aluminum zirconium complex: a previously unrecognized agent in the development of hypersensitivity granulomas. *J. Am. Acad. Dermatol.* 1993;28:874-876.
16. Newman L. S.Beryllium disease and sarcoidosis: clinical and laboratory links. *Sarcoidosis.* 1995;12(1):7-19.
17. Celik G, Sen E, Ulger AF, et al. Sarcoidosis caused by interferon therapy. *Respirology,* 2005;10(4):535-540.
18. Bargagli E, Mazzi A, Rottoli P. Markers of inflammation in sarcoidosis: blood, urine, BAL, sputum, and exhaled gas. *Clinics in chest medicine,* 2008;29(3): 445-458.
19. Ramstein J, Brooss CE, Simpson LJ, et al, IFN- γ -Producing T-Helper 17.1 Cells Are Increased in Sarcoidosis and Are More Prevalent than T-Helper Type 1 Cells. *American journal of respiratory and critical care medicine,* 2016;193(11):1281- 1291.

20. Planck A, Katchar K, Eklund A, et al. T-lymphocyte activity in HLA-DR17 positive patients with active and clinically recovered sarcoidosis. *Sarcoidosis Vasc. Diffuse Lung Dis.* 2003;20:110–117.
21. Agostini, Carlo, Fausto Adami, and Gianpietro Semenzato. 'New pathogenetic insights into the sarcoid granuloma', *Current opinion in rheumatology*.200;12:71-76.
22. Rosen, Y. 1994. Sarcoidosis. In D. H. Dail and S. P. Hammer, editors. *Pulmonary Pathology*, 2nd ed. New York Springer-Verlag. 13–645.
23. Iwai K, Tachibana T, Takemura T, et al. Pathological studies on sarcoidosis autopsy: I. Epidemiological features of 320 cases in Japan. *Acta Pathol Jpn.* 1993;43:372–376.
24. Kitaichi, M. Pathology of pulmonary sarcoidosis. *Clin. Dermatol.* 1986;4:108–115.
25. Statement on sarcoidosis. Joint Statement of the American Thoracic Society (ATS), the European Respiratory Society (ERS) and the World Association of Sarcoidosis and Other Granulomatous Disorders (WASOG) adopted by the ATS Board of Directors and by the ERS Executive Comitee. *Am J Respir Crit Car Med* 1999;160(2):736-755.
26. Valerye D, Bernaudin JF, Jeny F, et al. Pulmonary Sarcoidosis. *Clin Chest Med.* 2015;36(4):631-641.
27. Nardi A, Brillet PY, Letoumelin P, et al. Stage IV sarcoidosis: comparison of survival with the general population and causes of death. *Eur Respir J.* 2011;38(6):1368-1373.
28. Moller RB, Systemic Sarcoidosis, Fishman AP (ed), *Pulmonary Disease and Disorders*, Third Edition, New York. McGraw-Hill 1998; 1(69):1055-1068.
29. Laing G, Moffat M, Cleland J, et al. Sarcoidosis. *BMJ.* 2009;339:b3206.
30. Çapan N, Ertürk A. Sarkoidoz.(2004).Erdoğan Y and Samurkaşoğlu B, eds. *Diffüz Parankimal Akciğer Hastalıkları* (s.169-195) Ankara: Mesut matbaacılık.
31. Hoang DQ and Nguyen ET, Sarcoidosis. *Semin Roentgenol*, 2010; 45(1):36-42
32. Dempsey OJ Paterson EW, Kerr KM, et al. (2009). Sarcoidosis. *BMJ*, 339: p. b3206.
33. Mihailovic-Vucunic V, Jovanovic D. Pulmonary Sarcoidosis *Clin Chest Med* 2008; 29: 459-473.
34. Rizzato G, Palmieri G, Agrati AM, et al. The organ-specific extrapulmonary presentation of sarcoidosis: a frequent occurrence but a challenge to an early diagnosis. A 3-year-long prospective observational study. *Sarcoidosis Vasc Diffuse Lung Dis.* 2004;21(2):119-126.
35. Mañá J, Gómez-Vaquero C, Montero A. Löfgren's syndrome revisited: a study of 186 patients. *Am J Med.* 1999;107(3):240–245.
36. Hunninghake GW, Costabel U, Ando M, et al. ATS/ERS/WASOG statement on sarcoidosis. *Sarcoidosis Vasc Diffuse Lung Dis* 1999;16:149-173.
37. Ungprasert P, Tooley AA, Crowson CS, et al. Clinical characteristics of ocular sarcoidosis: a population-based study 1976-2013. *Ocul Immunol Inflamm.* 2019;27(3):389–395.
38. Groen F, Rothova A. Ocular involvement in sarcoidosis. *Semin Respir Crit Care Med.* 2017;38(4):514–522.
39. Evans M, Sharma O, LaBree L, et al. Differences in clinical findings between Caucasians and African Americans with biopsy-proven sarcoidosis. *Ophthalmology.* 2007;114(2):325–333.
40. Judson MA, Boan AD, Lackland DT. The clinical course of sarcoidosis: presentation, diagnosis, and treatment in a large white and black cohort in the United States. *Sarcoidosis Vasc Diffuse Lung Dis.* 2012;29(2):119–127.
41. Cozier YC, Berman JS, Palmer JR, et al. Sarcoidosis in black women in the United States: data from the Black Women's Health Study. *Chest.* 2011;139(1):144–150.
42. Ungprasert P, Crowson CS, Simonetto DA, et al. Clinical characteristics and outcome of hepatic sarcoidosis: a population-based study 1976-2013. *Am J Gastroenterol.* 2017;112(10):1556–1563.
43. Iwai K, Oka H. Sarcoidosis: report of ten autopsy cases in Japan. *Am Rev Respir Dis.* 1964;90:612–622.
44. Ricker W, Clark M. Sarcoidosis: a clinicopathologic review of three hundred cases, including twenty-two autopsies. *Am J Clin Pathol.* 1949;19(8):725–749.

45. Warshauer DM, Dumbleton SA, Molina PL, et al. Abdominal CT findings in sarcoidosis: radiologic and clinical correlation. *Radiology*. 1994;192(1):93-98.
46. Taavitsainen M, Koivuniemi A, Helminen J, et al. Aspiration biopsy of the spleen in patients with sarcoidosis. *Acta Radiol*. 1987;28:723-725.
47. Selroos O, Koivunen E (1983) Usefulness of fine-needle aspiration biopsy of spleen in diagnosis of sarcoidosis. *Chest* 83:193-195.
48. Ungprasert P, Carmona EM, Utz JP, et al. Epidemiology of sarcoidosis 1946-2013: a population-based study. *Mayo Clin Proc*. 2016;91(2):183-188.
49. Chapelon-Abrie C, de Zuttere D, Duhaut P. Cardiac sarcoidosis: a retrospective study of 41 cases. *Medicine*.2004;83(6):315-334.
50. Ungprasert P, Matteson E.L. Neurosarcoidosis. *Rheum Dis Clin North Am*. 2017;43(4):593-606.
51. Nozaki K, Judson M.A. Neurosarcoidosis: clinical manifestations, diagnosis and treatment. *Presse Med*. 2012;41(6, pt 2):e331-e348.
52. Carlson ML, White JR, Espahbodi M et al. Cranial base manifestations of neurosarcoidosis: a review of 305 patients. *Otol Neurotol*. 2014;36(1):156-166.
53. Joseph F.G, Scolding N.J. Neurosarcoidosis: a study of 30 new cases. *J Neurol Neurosurg Psychiatry*. 2009;80(3):297-304.
54. Tavee JO, Karwa K, Ahmed Z, et al. Sarcoidosis-associated small fiber neuropathy in a large cohort: clinical aspects and response to IVIG and anti-TNF alpha treatment. *Respir Med*. 2017;126:135-138.
55. Ungprasert P, Crowson CS, Matteson EL. Clinical characteristics of sarcoid arthropathy: a population-based study. *Arthritis Care Res (Hoboken)*. 2016;68(5):695-699.
56. Casella FJ, Allon M. The kidney in sarcoidosis. *J Am Soc Nephrol* 1993; 3:1555-1562.
57. Berliner AR, Haas M, Choi MJ. Sarcoidosis: the nephrologist's perspective. *Am J Kidney Dis*. 2006;48(5):856-870.
58. Judson MA. The diagnosis of sarcoidosis. *Clin Chest Med*. 2008;29:415-427.
59. Studdy PR, Bird R (1989) Serum angiotensin converting enzyme in sarcoidosis-its value in present clinical practice. *Ann Clin Biochem*. 26:13-18 .
60. Gungor S, Ozseker F, Yalcinsoy M, et al. Conventional markers in determination of activity of sarcoidosis. *Int Immunopharmacol*. 2015;25(1):174-179.
61. Visser LE, Flug AE, van der Lei J, et al. Cough due to ACE inhibitors: a case-control study using automated general practice data. *Eur J Clin Pharmacol*. 1996; 49: 439-444.
62. Abehsera M, Valeyre D, Grenier P, et al. Sarcoidosis with pulmonary fibrosis: CT patterns and correlation with pulmonary function. *AJR Am J Roentgenol*. 2000;174:1751-1757.
63. Kaira K, Oriuchi N, Otani Y, et al. Diagnostic usefulness of fluorine-18-alpha-methyltyrosine positron emission tomography in combination with 18F-fluorodeoxyglucose in sarcoidosis patients. *Chest*. 2007;131(4):1019-1027.
64. Kamphuis LS, Kwekkeboom DJ, Missotten TO, Baarsma GS, Dalm VA, Dik WA et al (2015) Somatostatin receptor scintigraphy patterns in patients with sarcoidosis. *Clin Nucl Med* 40:925-929.
65. Gormsen LC, Haraldsen A, Kramer S, et al. A dual tracer (68)Ga-DOTANOC PET/CT and (18)F-FDG PET/CT pilot study for detection of cardiac sarcoidosis. *EJNMMI Res*. 2016;6(1):52.
66. Shorr AF, Torrington KG, Hnatiuk OW. Endobronchial biopsy for sarcoidosis: a prospective study. *Chest*. 2001;120:109-114.
67. Nagai S, Izumi T. Bronchoalveolar lavage: still useful in diagnosing sarcoidosis? *Clin Chest Med*. 1997;18(4):787-797.
68. Uemura A, Morimoto S, Hiramitsu S, et al. Histologic diagnostic rate of cardiac sarcoidosis: evaluation of endomyocardial biopsies. *Am Heart J*. 1999;138:299-302.