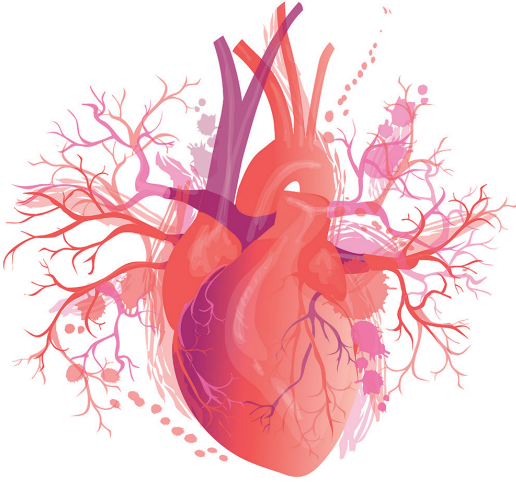


# BÖLÜM 43



## İNFEKTİF ENDOKARDİT

Ali Eren ONUŞ<sup>1</sup>

### GİRİŞ

İnfektif Endokardit kalp endotelinin bir enfeksiyonudur. Artan bir antimikrobiyal tedavi teçhizatına ve cerrahi müdahale için geliştirilmiş tekniklere rağmen, nüfusun yıllık insidansı 3-10/100.000 ve 30 günde %30'a varan bir genel ölüm oranı ile oldukça morbid ve mortal bir hastalık olmaya devam etmektedir (1,2,3).

Son zamanlarda, protez kapaklar, kardiyak pacemaker ve defibrilatör elektrotları ve diğer implante edilen materyallerde artan enfeksiyon prevalansı ile bu hastalıktan etkilenen hastaların spektrumunda çarpıcı bir değişiklik olmuştur. Stafilokokus aureus şu anda çoğu çalışmada tüm vakaların yaklaşık %26.6'sı ile en yaygın İE nedenidir, bunu %18.7 ile viridans grubu streptokoklar, %17.5 ile diğer streptokoklar ve %10.5 ile enterokoklar izlemektedir (4). Bu organizmalar birlikte tüm endokardit vakalarının %80-90'ını oluşturur. Erişkinliğe kadar hayatta kalan konjenital kalp hastalığı olan hastalarının sayısı arttıkça, infektif endokardit gelişme riski artan hastalarda buna karşılık gelen bir artış vardır (5). Ayrıca popülasyonumuz yaşlandıkça, endokardit

için klinik risk faktörleri ve tipik enfeksiyon yapan organizmalar da değişmektedir. Klinisyenlerin bu eğilimlerin farkında olması ve hastalarına en uygun bakımı sağlamak için önerilen yönetim stratejilerinde son değişiklikleri anlaması gerekir.

### KLİNİK ŞÜPHE

İE'nin klinik sunumu oldukça değişkendir ve değişken etken mikroorganizmaları, altta yatan kardiyak koşulları ve önceden var olan komorbiditeleri yansıtan akut, subakut veya kronik bir durum olarak ortaya çıkabilir. Hastaların %90'a kadar ateş, gece terlemesi, yorgunluk, kilo ve iştah kaybı ile başvurur ve yaklaşık %25'i başvuru sırasında embolik fenomen kanıtına sahiptir (3,4). Predispozan risk faktörleri, kalp üfürümleri, İE ile ilişkili vaskülitik ve embolik fenomenleri olan hastalarda İE tanısı dikkatle düşünülmelidir (Tablo 1) (6,7).

Antimikrobiyal tedaviye genellikle üç set kan kültürü alınmadan başlanmamalıdır; bu, vakaların %98'inde bakteriyemiye başarılı bir şekilde tespit edecektir (6,8). Tersine, antibiyotik tedavisinin önceden uygulanması, kültür negatif endo-

<sup>1</sup> Arş. Gör. Dr., Kahramanmaraş Sütçü İmam Üniversitesi Kardiyoloji AD, dr.alionus@gmail.com

**KAYNAKLAR**

1. Mostaghim AS, Lo HYA, Khardori N. A retrospective epidemiologic study to define risk factors, microbiology, and clinical outcomes of infective endocarditis in a large tertiary-care teaching hospital. *SAGE Open Medicine*. 2017;5:1–9. A cohort of 363 cases with endocarditis from 2007 to 2015 provide current epidemiological data on risk factors and mortality.
2. Mostaghim AS, Lo HYA and Khardori N. A retrospective epidemiologic study to define risk factors, microbiology, and clinical outcomes of infective endocarditis in a large tertiary-care teaching hospital. *SAGE Open Med* 2017;5:2050312117741772
3. Murdoch DR, Corey GR, Hoen B et al. Clinical presentation, etiology, and outcome of infective endocarditis in the 21st century: the International Collaboration on Endocarditis-Pro prospective Cohort Study. *Arch Intern Med* 2009;169:463–73.
4. Selton-Suty C, Celard M, Le Moing V et al. Prevalence of *Staphylococcus aureus* in infective endocarditis: a 1-year population-based survey. *Clin Infect Dis* 2012;54:1230–9.
5. Benziger CP, Stout K, Zaragoza-Marcias E, Bertozzi-Villa A, Flaxman AD. Projected growth of the adult congenital heart disease population in the United States to 2050: an integrative systems modeling approach. *Popul Health Metr*. 2015;13(29):1–8.
6. Habib G, Lancellotti P, Antunes MJ et al. 2015 ESC Guidelines for the management of infective endocarditis: The Task Force for the Management of Infective Endocarditis of the European Society of Cardiology (ESC). Endorsed by: European Association for CardioThoracic Surgery (EACTS), the European Association of Nuclear Medicine (EANM). *Eur Heart J* 2015;36:3075–128.
7. Toyoda N, Chikwe J, Itagaki S et al. Trends in Infective Endocarditis in California and New York State, 1998–2013. *JAMA* 2017;317:1652–60.
8. Lee A, Mirrett S, Reller LB and Weinstein MP. Detection of bloodstream infections in adults: how many blood cultures are needed? *J Clin Microbiol* 2007;45:3546–8.
9. Habib G, Derumeaux G, Avierinos JF et al. Value and limitations of the Duke criteria for the diagnosis of infective endocarditis. *J Am Coll Cardiol* 1999;33:2023–9.
10. Vieira ML, Grinberg M, Pomerantzeff PM, Andrade JL and Mansur AJ. Repeated echocardiographic examinations of patients with suspected infective endocarditis. *Heart* 2004;90:1020–4.
11. Chen W, Sajadi MM and Dilsizian V. Merits of FDG PET/CT and functional molecular imaging over anatomic imaging with echocardiography and CT angiography for the diagnosis of cardiac device infections. *JACC Cardiovasc Imaging* 2018;11:1679–91.
12. Rajani, Ronak, and John L. Klein. “Infective endocarditis: A contemporary update.” *Clinical medicine* 20.1 (2020): 31.
13. Lung, Bernard, et al. “Determinants of cerebral lesions in endocarditis on systematic cerebral magnetic resonance imaging: a prospective study.” *Stroke* 44.11 (2013): 3056–3062.
14. Mohananey D, Mohadjer A, Pettersson G et al. Association of vegetation size with embolic risk in patients with infective endocarditis: a systematic review and meta-analysis. *JAMA Intern Med* 2018;178:502–10.
15. Garcia-Cabrera E, Fernandez-Hidalgo N, Almirante B et al. Neurological complications of infective endocarditis: risk factors, outcome, and impact of cardiac surgery: a multicenter observational study. *Circulation* 2013;127:2272–84.
16. Wong D, Rubinshtein R, Keynan Y. Alternative cardiac imaging modalities to echocardiography for the diagnosis of infective endocarditis. *Am J Cardiol* 2016;118:1410–8.
17. Eudailey K, Lewey J, Hahn RT, George I. Aggressive infective endocarditis and the importance of early repeat echocardiographic imaging. *J Thorac Cardiovasc Surg* 2014;147:e26–8.
18. Bruun NE, Habib G, Thuny F, Sogaard P. Cardiac imaging in infectious endocarditis. *Eur Heart J* 2014;35:624–32.
19. Iverson K, Ihlemann N, Gill SU et al. Partial oral versus intravenous antibiotic treatment of endocarditis. *N Engl J Med* 2019;380:415–24.
20. Gould FK, Denning DW, Elliott TS et al. Guidelines for the diagnosis and antibiotic treatment of endocarditis in adults: a report of the Working Party of the British Society for Antimicrobial Chemotherapy. *J Antimicrob Chemother* 2012;67:269–89.
21. Habib, Gilbert, et al. “2015 ESC guidelines for the management of infective endocarditis: the task force for the management of infective endocarditis of the European Society of Cardiology (ESC) endorsed by: European Association for Cardio-Thoracic Surgery (EACTS), the European Association



- of Nuclear Medicine (EANM).” *European heart journal* 36.44 (2015): 3075-3128.
22. Chu VH, Sexton DJ, Cabell CH, Reller LB, Pappas PA, Singh RK, Fowler VG Jr., Corey GR, Aksoy O, Woods CW. Repeat infective endocarditis: differentiating relapse from reinfection. *Clin Infect Dis* 2005;41:406–409.
  23. Baumgartner H, Bonhoeffer P, De Groot NM, de Haan F, Deanfield JE, Galie N, Gatzoulis MA, Gohlke-Baerwolf C, Kaemmerer H, Kilner P, Meijboom F, Mulder BJ, Oechslin E, Oliver JM, Serraf A, Szatmari A, Thaulow E, Vouhe PR, Walma E. ESC Guidelines for the management of grown-up congenital heart disease (new version 2010). *Eur Heart J* 2010;31:2915–2957.
  24. Knirsch W, Nadal D. Infective endocarditis in congenital heart disease. *Eur J Pediatr* 2011;170:1111–1127
  25. Wilson W, Taubert KA, Gewitz M, Lockhart PB, Baddour LM, Levison M, Bolger A, Cabell CH, Takahashi M, Baltimore RS, Newburger JW, Strom BL, Tani LY, Gerber M, Bonow RO, Pallasch T, Shulman ST, Rowley AH, Burns JC, Ferrieri P, Gardner T, Goff D, Durack DT. Prevention of infective endocarditis: guidelines from the American Heart Association: a guideline from the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *Circulation* 2007;116: 1736–1754.
  26. Nishimura RA, Otto CM, Bonow RO, Carabello BA, Erwin JP III, Guyton RA, O’Gara PT, Ruiz CE, Skubas NJ, Sorajja P, Sundt TM III, Thomas JD. 2014 AHA/ ACC guideline for the management of patients with valvular heart disease: executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 2014;63: 2438–2488
  27. Sherman-Weber S, Axelrod P, Suh B, Rubin S, Beltramo D, Manacchio J, Furukawa S, Weber T, Eisen H, Samuel R. Infective endocarditis following orthotopic heart transplantation: 10 cases and a review of the literature. *Transpl Infect Dis* 2004;6:165–170.
  28. Duval X, Leport C. Prophylaxis of infective endocarditis: current tendencies, continuing controversies. *Lancet Infect Dis* 2008;8:225–232
  29. Lockhart PB, Brennan MT, Sasser HC, Fox PC, Paster BJ, Bahrani-Mougeot FK. Bacteremia associated with toothbrushing and dental extraction. *Circulation* 2008;117:3118–3125.
  30. Duval X, Alla F, Hoen B, Danielou F, Larrieu S, Delahaye F, Leport C, Briancon S. Estimated risk of endocarditis in adults with predisposing cardiac conditions undergoing dental procedures with or without antibiotic prophylaxis. *Clin Infect Dis* 2006;42:e102–e107.
  31. Cahill, T. J., Harrison, J. L., Jewell, P., Onakpoya, I., Chambers, J. B., Dayer, M., ... & Prendergast, B. D. (2017). Antibiotic prophylaxis for infective endocarditis: a systematic review and meta-analysis. *Heart*, 103(12), 937-944.
  32. Thornhill MH, Jones S, Prendergast B et al. Quantifying infective endocarditis risk in patients with predisposing cardiac conditions. *Eur Heart J* 2018;39:586–95