BÖLÜM 7

PERİFERİK ARTER HASTALIĞI VE SİSTEMİK HASTALIKLAR

Ali Gökhan ÖZYILDIZ[1]

GİRİŞ

Periferik arter hastalığı (PAH), alt ekstremite aterosklerozunun sonucudur ve sıklıkla kardiyovasküler bir hastalığa eşlik eder. Dünya genelinde 200 milyon üzerinde kişiyi etkilediği bilinen global bir sorun olan PAH'ın 70 yaş üstü popülasyonda prevelansı %30'a ulaşmaktadır. İntermittant kladikasyo klasik semptomu olmakla birlikte hastaların yaklaşık yarısı asemptomatiktir. Semptomatik olsun ya da olmasın PAH, artmış kardiyovasküler olayların ve tüm nedenlere bağlı mortalitenin bağımsız bir öngörücüsüdür. (1,2)

Koroner arter hastalığı ve serebrovasküler hastalıkta olduğu gibi PAH'da en önemli risk faktörleri sigara, diyabet, hipertansiyon ve hiperlipidemidir. Geleneksel risk faktörleri periferal vasküler yataktaki aterosklerotik süreci tek başına izah edemez. İnflamasyon ve anormal homeostazinin aterosklerotik sürece katkı yaptığı bilinmektedir. Bu sebeple ilgili belirteçlerle yapılan çalışmalarda c-reaktif protein (CRP), hiperürisemi ve hiperhomosisteinemi gibi geleneksel olmayan faktörlerin de PAH ile ilişkisi saptanmıştır. (3) Tüm bu bilgiler ışığında PAH'ın izole bir hastalık olmaması, diyabet başta olmak üzere bazı sistemik hastalıklarla yakın ilişkisi beklenen bir sonuç olacaktır. Bu bölümde PAH ile ilişkisi kanıtlanmış ve literatürde bu ilişki daha sık vurgulanmış sistemik hastalıklara değinilmiştir.

PERİFERİK ARTER HASTALIĞI VE DİYABET

Diyabet sigaradan sonra PAH'ın ikinci en sık sebebidir ve genel popülasyona göre diyabetli hastalarda PAH prevelansı iki kat fazladır. Diyabetik hastalardaki PAH

[1] Uzm. Dr., Recep Tayyip Erdoğan Üniversitesi, Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği, aligokhanozyildiz@gmail.com

KAYNAKÇA

1. Fowkes FG, Rudan D, Rudan I, et al. Comparison of global estimates of prevalence and risk factors for peripheral artery disease in 2000 and 2010: a systematic review and analysis. Lancet 2013; 382:1329-1340.
2. McDermott MM, Greenland P, Liu K, et al. Leg symptoms in peripheral arterial disease: associated clinical characteristics and functional impairment. JAMA 2001; 286:1599-1606.
3. Soyoye DO, Abiodun OO, Ikem RT, et al. Diabetes and peripheral artery disease: A review. World J Diabetes 2021; 12 (6):827-838.
4. Özker E. Diyabet ve Periferik Arter Hastalığı. In Polat A, Akay HT, Köksal C, et al, editors. Damar. İstanbul: İstanbul Tıp Kitabevleri, 2019; 311-318.
5. Murabito JM, D'Agostino RB, Silbershatz H, et al. Intermittent claudication. A risk profile from The Framingham Heart Study. Circulation 1997; 96:44-49.
6. Ikem R, Ikem I, Adebayo O, et al. An assessment of peripheral vascular disease in patients with diabetic foot ulcer. Foot (Edinb) 2010; 20:114-117.
7. Stoberock K, Kaschwich M, Nicolay SS, et al. The interrelationship between diabetes mellitus and peripheral arterial disease- a systematic review. Vasa 2020:1-8.
8. Selvin E, Erlinger TP. Prevalence of and risk factors for peripheral arterial disease in the United States: results from the National Health and Nutrition Examination Survey, 1999-2000. Circulation 2004; 110:738-743.
9. American Diabetes Association. Peripheral arterial disease in people with diabetes. Diabetes Care 2003; 26:3333-3341.
10. Everhart JH, Pettitt DJ, Knowler WC, et al. Medial arterial calcification and its association with mortality and complications of diabetes. Diabetologia 1988; 31:16-23.
11. Hennion DR, Siano KA. Diagnosis and treatment of peripheral arterial disease. Am Fam Physician 2013; 88:306-310.
12. ESC Scientific Document Group. Questions and answers on diagnosis and management of patients with Peripheral Arterial Diseases: a companion document of the 2017 ESC Guidelines for the Diagnosis and Treatment of Peripheral Arterial Diseases, in collaboration with the European Society for Vascular Surgery (ESVS): Endorsed by: the European Stroke Organisation (ESO)The Task Force for the Diagnosis and Treatment of Peripheral Arterial Diseases of the European Society of Cardiology (ESC) and of the European Society for Vascular Surgery (ESVS). Eur Heart J 2018; 39:e35-e41.
13. Gerhard-Herman MD, Gornik HL, Barrett C, Barshes NR, et al. 2016 AHA/ACC Guideline on the Management of Patients with Lower Extremity Peripheral Artery Disease: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Circulation 2017; 135:e686-e725.
14. American College of Cardiology Foundation Task Force; American Heart Association Task Force. Management of patients with peripheral artery disease (compilation of 2005 and 2011 ACCF/AHA Guideline Recommendations): a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. J Am Coll Cardiol 2013; 61:1555-1570.
15. Robless P, Mikhailidis DP, Stansby GP. Cilostazol for peripheral arterial disease. Cochrane Database Syst Rev 2008:CD003748.
16. Holman RR, Paul SK, Bethel MA, et al. 10-year follow-up of intensive glucose control in type 2 diabetes. N Engl J Med 2008; 359:1577-1589.
17. Williams B, Mancia G. Ten Commandments of the 2018 ESC/ESH HTN Guidelines on Hypertension in Adults. Eur Heart J 2018; 39:3007-3008.
18. Fudim M, Hopley CW, Huang Z, et al. Association of Hypertension and Arterial Blood Pressure on Limb and Cardiovascular Outcomes in Symptomatic Peripheral Artery Disease: The EUC-

LID Trial. Circ Cardiovasc Qual Outcomes 2020; 13 (9):e006512.
19. Makin A, Lip GY, Silverman S, et al. Peripheral vascular disease and hypertension: a forgotten association? J Hum Hypertens 2002; 15:447-454.
20. Kannel WB, McGee DL. Update on some epidemiologic features of intermittent claudication: the Framingham Study. J Am Geriatr Soc 1985; 33:13-18.
21. Lu Y, Ballew SH, Tanaka H, et al. 2017 ACC/AHA blood pressure classification and incident peripheral artery disease: The Atherosclerosis Risk in Communities (ARIC) Study. Eur J Prev Cardiol 2020; 27 (1):51-59.
22. Schmieder RE. End organ damage in hypertension. Deutsches Arzteblatt international 2010; 107:866-873.
23. Mehler PS, Coll JR, Estacio R, et al. Intensive blood pressure control reduces the risk of cardiovascular events in patients with peripheral arterial disease and type 2 diabetes. Circulation 2003; 107:753-756.
24. HOPE Study Investigators. Impact of ramipril in patients with evidence of clinical or subclinical peripheral arterial disease. Eur Heart J 2004; 25:17-24.
25. SPRINT Research Group. A randomized trial of intensive versus standard blood-pressure control. N Engl J Med 2015; 373:2103-2116.
26. Bavry AA, Anderson RD, Gong Y, et al. Outcomes among hypertensive patients with concomitant peripheral and coronary artery disease: findings from the INternational VErapamil-SR/Trandolapril STudy. Hypertension 2010; 55:48-53.
27. Itoga NK, Tawfik DS, Lee CK, et al. Association of blood pressure measurements with peripheral artery disease events. Circulation 2018; 138:1805-1814.
28. Aboyans V, Ricco JB, Bartelink MEL, et al. Editor's choice-n2017 ESC guidelines on the diagnosis and treatment of peripheral arterial diseases, in collaboration with the Europan Society for Vascular Surgery (ESVS). Eur J Endovasc Surgery 2018; 55:305-368.
29. Olin JW. Hypertension and peripheral arterial disease. Vasc Med 2005; 10 (3): 241-246.
30. Stewart KJ, Hiatt WR, Regensteiner JG, et al. Exercise training for claudication. N Engl J Med 2002; 347:1941-1951.
31. Radack K, Deck C. Beta-adrenergic blocker therapy does not worsen intermittent claudication in subjects with peripheral arterial disease. A meta-analysis of randomized controlled trials. Arch Intern Med 1991; 151:1769-1976.
32. Pons-Estel GJ, Alarcón GS, Scofield L, et al. Understanding the epidemiology and progression of systemic lupus erythematosus. Semin Arthritis Rheum 2010; 39:257-268.
33. Weckerle CE, Niewold TB. The unexplained female predominance of systemic lupus erythematosus: clues from genetic and cytokine studies. Clin Rev Allergy Immunol 2011; 40:42-49.
34. McDonald J, Stewart J, Urowitz M, et al. Peripheral vascular disease in patients with systemic lupus erythematosus. Ann Rhem Dis 1992; 51:56-60.
35. Ward MM. Premature morbidity from cardiovascular and cerebrovascular diseases in women with systemic lupus erythematosus. Arthritis Rheum 1999; 42:338-346.
36. Forte F, Buonaiuto A, Calcaterra I, et al. Association of systemic lupus erythematosus with peripheral arterial disease: a meta-analysis of literature studies. Rheumatology 2020; 59 (11):3181-3192.
37. Tydén H, Lood C, Gullstrand B, et al. Endothelial dysfunction is associated with activation of the type I interferon system and platelets in patients with systemic lupus erythematosus. RMD Open 2017; 3:e000508.
38. Liu Y, Kaplan MJ. Cardiovascular disease in systemic lupus erythematosus: an update. Curr Opin Rheumatol 2018; 30:441-448.

39. Gawaz M, Stellos K, Langer HF. Platelets modulate atherogenesis and progression of atherosclerotic plaques via interaction with progenitor and dendritic cells. J Thromb Haemost 2008; 6:235-242.
40. Boilard E, Blanco P, Nigrovic PA. Platelets: active players in the pathogenesis of arthritis and SLE. Nat Rev Rheumatol 2012; 8:534-542.
41. Andrianova IA, Ponomareva AA, Mordakhanova ER, et al. In systemic lupus erythematosus anti-dsDNA antibodies can promote thrombosis through direct platelet activation. J Autoimmun 2019; 107:102355.
42. Erdozain JG, Villar I, Nieto J, et al. Peripheral arterial disease in systemic lupus erythematosus: prevalence and risk factors. J Rheumatol 2014; 41 (2):310-317.
43. Criqui MH, Denenberg JO, Langer RD, et al. The epidemiology of peripheral arterial disease: importance of identifying the population at risk. Vasc Med 1997; 2:221-226.
44. Criqui MH, Ninomiya JK, Wingard DL, et al. Progression of peripheral arterial disease predicts cardiovascular disease morbidity and mortality. J Am Coll Cardiol 2008; 52:1736-1742.
45. Mosca L, Benjamin EJ, Berra K, et al. Effectiveness-based guidelines for the prevention of cardiovascular disease in women-2011 update: a guideline from the American Heart Association. Circulation 2011; 123:1243-1262.
46. Van Den Hoogen F, Khanna D, Fransen J, et al. 2013 classification criteria for systemic sclerosis: an american college of rheumatology/European league against rheumatism collaborative initiative. Arthritis Rheum 2013; 65:2737-2747.
47. Gabrielli A, Avvedimento EV, Krieg T. Scleroderma. N Engl J Med 2009; 360:1989-2003.
48. Hsieh MC, Chen HH, Chuo TY, et al. Association between systemic sclerosis and peripheral arterial disease: a nationwide observation retrospective claim records cohort study in Taiwan. BMJ Open 2021; 11 (9): e048149.
49. Hettema ME, Bootsma H, Kallenberg CGM. Macrovascular disease and atherosclerosis in SSc. Rheumatology 2008; 47:578-583.
50. Cassius C, Seta V, Monfort JB, et al. Systemic sclerosis is associated with lower limb vascular stiffness and microvascular impairment: results from a prospective study. Clin Rheumatol 2021; 40 (9):3679-3686.
51. Grech AC, Gatt A, Borg AA, et al. Determining the presence of Peripheral Arterial Disease in patients with Rheumatoid Arthritis. Mediterr J Rheumatol. 2017; 28 (2):86–93.
52. Chaung YW, Yu MC, Lin CL, et al. Risk of peripheral arterial occlusive disease in patients with rheumatoid arthritis. A nationwide population-based cohort study. Thromb Haemost 2016; 115 (2):439-445.
53. Sedrakyan S, Fatima T, Khatun MK, et al. Evaluation of the Risk of Getting Peripheral Artery Disease in Rheumatoid Arthritis and the Selection of Appropriate Diagnostic Methods. Cureus 2020; 12 (8):e9782.
54. Tehan PE, Stewart S, Chuter VH, et al. Relationship between lower limb vascular characteristics, peripheral arterial disease and gait in rheumatoid arthritis. Int J Rheum Dis 2019; 22 (11):2017-2024.
55. Dzieża-Grudnik A, Sulicka J, Strach M, et al. Arterial stiffness is not increased in patients with short duration rheumatoid arthritis and ankylosing spondylitis. Blood Press 2017; 26:115–121.