

26. ACİL SERVİSTE ANJİYOÖDEM YÖNETİMİ

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Acil servis başvurularının %8-20'si dermatolojik şikayetler nedeniyle gözlenmekte ve bu başvuruların %7-35'ini anjiyoödem ve ürtiker oluşturmaktadır (1-4). Anafilaksi ve havayolu obstrüksiyonu görülebilmek ihtimali nedeniyle ölümcül seyir gösterebilen anjiyoödem akut yönetiminde acil tıp hizmeti veren hekimler anahtar rol oynamaktadır. Bu bölümde anjiyoödem patogenezi, etiyojisi, güncel tanı ve tedavi yaklaşımları detaylı bir şekilde ortaya koymaya çalışılmıştır.

1. Sınıflama

Mikrovasküler permeabilite artışı nedeniyle subkütanöz ve submukozal dokularda basmakla çukurlaşmayan ve kendi kendini sınırlayan ödem gözlemlendiği anjiyoödem sıklıkla baş-boyun bölgesinde (göz kapakları, dudaklar, dil, ağız tabanı, yumuşak damak, larinks), ekstremitelerde, dış genitelyada ve gastrointestinal sistemde (GİS) gözlenmektedir (5). Ürtikere nazaran daha derin dokularda gözlenen ödematöz değişikliklere genellikle kaşıntı eşlik etmezken, sıklıkla ağrı, yanma ve basınç hissi söz konusudur. Ancak histaminerjik anjiyoödem olgularının yaklaşık %50'lik bir kısmında klinik tabloya ürtiker ve kaşıntının da eşlik edebileceği unutulmamalıdır (6-9). Anjiyoödem, patogenezinin histaminerjik ya da bradikininerek kökenli olup olmamasına göre sınıflandırılmaktadır (Tablo 1).

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Kaynaklar

1. Freiman A, Borsuk D, Sasseville D. Dermatologic emergencies.CMAJ. 2005;173:1317-9.
2. Wang E, Lim BL, Than KY. Dermatological conditions presenting at an emergency department in Singapore. Singapore Med J. 2009;50:881-884.
3. Alpalhão M, Uva L, Soromenho G, et al. Dermatological emergencies: one-year data analysis of 8,620 patients from the largest Portuguese tertiary teaching hospital. Eur J Dermatol. 2016;26:460-464.
4. Martínez-Martínez ML, Escario-Travesedo E, Rodríguez-Vázquez M, et al. [Dermatology consultations in an emergency department prior to establishment of emergency dermatology cover]. Actas Dermosifiliogr. 2011;102:39-47.
5. Vleeming W, van Amsterdam JGC, Stricker BHCh, de Wildt DJ. ACE inhibitor-induced angioedema. Incidence, prevention and management. Drug Saf 1998;18:171-88.
6. Moellman JJ, Bernstein JA, Lindsell C, et al. A consensus parameter for the evaluation and management of angioedema in the emergency department. Acad Emerg Med. 2014;21(4):469-84.
7. Bork K. An evidence based therapeutic approach to hereditary and acquired angioedema. Curr Opin Allergy Clin Immunol. 2014;14(4):354-62.
8. Kim SJ, Brooks JC, Sheikh J, et al. Angioedema deaths in the United States, 1979-2010. Ann Allergy Asthma Immunol. 2014;113(6):630-4.
9. Bernstein JA, Moellman J. Emerging concepts in the diagnosis and treatment of patients with undifferentiated angioedema. Int J Emerg Med. 2012;5(1):39.
10. Pedrosa, M., Prieto-García, A., Sala-Cunill, A., Spanish Group for the Study of Bradykinin-Mediated Angioedema (SGBA) and the Spanish Committee of Cutaneous Allergy (CCA), Spanish Group for the Study of Bradykinin-Mediated Angioedema (SGBA); Caballero, T., ... & Villareal, O. (2014). Management of angioedema without urticaria in the emergency department. Annals of medicine, 46(8), 607-618.
11. Busse, P. J., & Smith, T. (2017). Histaminergic angioedema. Immunology and Allergy Clinics, 37(3), 467-481.
12. Hacard, F., Nosbaum, A., Bensaid, B., Nicolas, J. F., Augey, F., Goujon, C., & Bérard, F. (2014). Histaminergic angioedema and chronic urticaria. Presse Medicale (Paris, France: 1983), 44(1), 37-42.
13. Zuraw, B. L. (2008). Hereditary angioedema. New England Journal of Medicine, 359(10), 1027-1036.
14. Lunn M, Banta E. Ecallantide for the treatment of hereditary angiodema in adults. Clin Med Insights Cardiol 2011;5:49-54.
15. Blanch A, Roche O, López-Granados E, Fontán G, López-Trascasa M. Detection of C1 inhibitor (SERPING1/C1NH) mutations in exon 8 in patients with hereditary angioedema: evidence for 10 novel mutations. Hum Mutation. 2002 ; 20 : 405 – 6.
16. Bork K, Barnstedt SE, Koch P, Traupe H. Hereditary angioedema with normal C1- inhibitor activity in women. Lancet 2000;356:213-7.
17. Bafunno V, Firinu D, D'Apolito M, Cordisco G, Loffredo S, Leccese A, et al. Mutation of the angiotensinogen-1 gene (ANGPT1) associates with a new type of hereditary angioedema. J Allergy Clin Immunol 2018;141:1009-17.
18. Bork K, Wulff K, Steinmüller-Magin L, Braenne I, Staubach-Renz P, Witzke G, et al. Hereditary angioedema with a mutation in the plasminogen gene. Allergy 2018;73:442-50.
19. Binkley KE, Davis A III. Clinical, biochemical, and genetic characterization of a novel estrogen-dependent inherited form of angioedema. J Allergy Clin Immunol 2000;106:546-50.
20. Castelli R, Deliliers D, Zingale LC, Pogliani E, Cicardi M. Lymphoproliferative disease and acquired C1 inhibitor deficiency. Haematologica. 2007; 92: 716- 18.

21. Barilla-LaBarca M, Gioffre D, Zanichelli A, Cicardi M, Atkinson JP. Acquired C1 esterase inhibitor deficiency in two patients presenting with a lupus-like syndrome and anticardiolipin antibodies. *Arthritis Rheum.* 2002; 47: 223–6.
22. Farkas H, Szongoth M, Bély M, Varga L, Fekete B, Karádi I, et al. Angioedema due to acquired deficiency of C1-esterase inhibitor associated with leucocytoclastic vasculitis. *Acta Derm Venereol.* 2001 ; 81 : 298 – 300 .
23. Farkas H, Csepregi A, Nemesánszky E. Acquired angioedema associated with chronic hepatitis C. *J Allergy Clin Immunol.* 1999; 103: 711– 12.
24. Cugno M, Zanichelli A, Foieni F, Caccia S, Cicardi M. C1-inhibitor deficiency and angioedema: molecular mechanisms and clinical progress. *Trends Mol Med* 2009;15:69–78.
25. Maurer M, Magerl M, Ansotegui I, Aygören-Pürsün E, Betschel S, Bork K, et al. The international WAO/EAACI guideline for the management of hereditary angioedema- the 2017 revision and update. *Allergy* 2018. <https://doi.org/10.1111/all.13384>. [Epub ahead of print].
26. Bas M, Adams V, Suvorova T, et al. Nonallergic angioedema: role of bradykinin. *Allergy.* 2007;62(8):842-56.
27. Bernstein JA. Update on angioedema: evaluation, diagnosis, and treatment. *Allergy Asthma Proc.* 2011;32(6):408-12.
28. Banerji A, Clark S, Blanda M, et al. Multicenter study of patients with angiotensin-converting enzyme inhibitor induced angioedema who present to the emergency department. *Ann Allergy Asthma Immunol.* 2008;100(4):327-32.
29. Bluestein HM, Hoover TA, Banerji AS, et al. Angiotensinconverting enzyme inhibitor-induced angioedema in a community hospital emergency department. *Ann Allergy Asthma Immunol.* 2009;103(6):502-7.
30. Jenneck C, Juergens U, Buecheler M, Novak N. Pathogenesis, diagnosis, and treatment of aspirin intolerance. *Ann Allergy Asthma Immunol.* 2007 ; 99 : 13 – 21.
31. Riedl MA, Casillas AM. Adverse drug reactions: types and treatment options. *Am Fam Physician* 2003;68:1781–91.
32. Cicardi M, Aberer W, Banerji A, Bas M, Bernstein JA, Bork K, et al. HAWK under the patronage of EAACI (European Academy of Allergy and Clinical Immunology). Classification, diagnosis, and approach to treatment for angioedema: consensus report from the Hereditary Angioedema International Working Group. *Allergy.* 2014 ;69(5):602-16.
33. Kaplan AP. Angioedema *World Allergy Organ J* 2008;1:103–13.
34. Bucher MC, Petkovic T, Helbling A, Steiner UC. Idiopathic non-histaminergic acquired angioedema: a case series and discussion of published clinical trials. *Clin Transl Allergy* 2017;317:27.
35. Cugno M, Tedeschi A, Nussberger J. Bradykinin in idiopathic non-histaminergic angioedema. *Clin Exp Allergy* 2017;47:139–40.
36. Agostoni A, Aygören-Pürsün E, Binkley KE, Blanch A, Bork K, Bouillet L, et al. Hereditary and acquired angioedema: problems and progress: proceedings of the third C1 esterase inhibitor deficiency workshop and beyond. *J Allergy Clin Immunol.* 2004 ; 114(3 Suppl) :S51– 131.
37. Carreer FM. The C1 inhibitor deficiency. A review. *Eur J Clin Chem Clin Biochem.* 1992; 30: 793– 807.
38. Farkas H, Harmat G, Fáy A, Fekete B, Karádi I, Visy B, et al. Erythema marginatum preceding an acute oedematous attack of hereditary angioneurotic oedema. *Acta Derm Venereol.* 2001; 81: 376– 7.
39. Temino VM, Stokes Peebles RS Jr. The spectrum and treatment of angioedema. *Am J Med* 2008;121:282–6.
40. Caballero T, Baeza ML, Caballero R, Campos A, Cimbollek S, Gómez-Traseira C, et al. Consensus statement on the diagnosis, management, and treatment of angioedema mediated by bradykinin. Part II. Treatment, follow-up, and special situations. *J Investig Allergol Clin Immunol.* 2011; 21: 422– 3.

41. Pedrosa M , C aballero T , G ó m ez-Traseira C , O lveira A , L ó p ez-Serrano MC, L ó pez-Serrano C . Usefulness of abdominal ultrasonography in the follow-up of patients with hereditary C1-inhibitor deficiency . *Ann Allergy Asthma Immunol.* 2009; 102: 483– 6.
42. Sadeghi N, Van Daele D, Hainaux B, Engelholm L, Michel O. Hereditary angio-edema involving the gastrointestinal tract: CT findings. *Eur Radiol.* 2001; 11: 99– 101.
43. Nzeako U C. Diagnosis and management of angioedema with abdominal involvement: a gastroenterology perspective . *World J Gastroenterol.* 2010 ; 16 : 4913.
44. Craig T, Pursun EA, Bork K, et al. WAO Guideline for the Management of Hereditary Angioedema. *World Allergy Organ J.* 2012;5(12):182-99.
45. Bowen T, Cicardi M, Farkas H, et al. 2010 International consensus algorithm for the diagnosis, therapy and management of hereditary angioedema. *Allergy Asthma Clin Immunol.* 2010;6(1):24.
46. Lang DM, Aberer W, Bernstein JA, et al. International consensus on hereditary and acquired angioedema. *Ann Allergy Asthma Immunol.* 2012;109(6):395-402.
47. Markovic SN, Inwards DJ, Phyliky RP. Acquired C1 esterase inhibitor deficiency. *Ann Intern Med.* 2000;133(10):839.
48. Li H, Busse P, Lumry WR, et al. Comparison of chromogenic and ELISA functional C1 inhibitor tests in diagnosing hereditary angioedema. *J Allergy Clin Immunol Pract.* 2015;3(2):200-5.
49. Bork K. Angioedema. *Immunol Allergy Clin North Am.* 2014;34(1):23-31.
50. Wilkerson RG. Angioedema in the emergency department: an evidencebased review . *Emerg Med Pract.* 2012 ; 14 : 1 – 21 .
51. Sabroe RA, Black AK. Angiotensin-converting enzyme (ACE) inhibitors and angioedema. *Br J Dermatol* 1997;136:153–8.
52. Bork K, Hardt J, Witzke G. Fatal laryngeal attacks and mortality in hereditary angioedema due to C1-INH deficiency. *J Allergy Clin Immunol.* 2012;130(3):692-7.
53. Bork K. Recurrent angioedema and the threat of asphyxiation. *Dtsch Arztebl Int.* 2010;107(23):408-14.
54. Palmer M, Rosenbaum S. Clinical practice guideline: initial evaluation and management of patients presenting with acute urticaria or angioedema. American Academy of Emergency Medicine. Available at: http://www.aaem.org/education/urticaria_angioedema.php. Published July 10, 2006. Accessed August 1, 2011.
55. Bernstein JA, Cremonse P, Hoffman TK, et al. Angioedema in the emergency department: a practical guide to differential diagnosis and management. *Int J Emerg Med.* 2017;10(1):15.
56. Kramer A, Müller D, Pfortner R, et al. Fiberoptic vs videolaryngoscopic (C-MAC®) D-BLADE) nasal awake intubation under local anaesthesia. *Anaesthesia.* 2015;70(4):400-6.
57. Simmons ST, Schleich AR. Airway regional anesthesia for awake fiberoptic intubation. *Reg Anesth Pain Med.* 2002;27(2):180-92.
58. Long, B. J., Koyfman, A., & Gottlieb, M. (2019). Evaluation and management of angioedema in the emergency department. *Western Journal of Emergency Medicine*, 20(4), 587.
59. Ishoo, E., Shah, U. K., Grillone, G. A., Stram, J. R., & Fuleihan, N. S. (1999). Predicting airway risk in angioedema: staging system based on presentation. *Otolaryngology—Head and Neck Surgery*, 121(3), 263-268.
60. James C, Bernstein JA. Current and future therapies for the treatment of histamine-induced angioedema. *Expert Opin Pharmacother.* 2017;18(3):253-62.
61. Lin RY, Curry A, Pesola GR, et al. Improved outcomes in patients with acute allergic syndromes who are treated with combined H1 and H2 antagonists. *Ann Emerg Med.* 2000;36(5):462-8.
62. Rosenberg, D. L., Viswanathan, R. K., & Mathur, S. K. (2019). Response to H1 Antihistamine Therapy in Idiopathic Angioedema. *Journal of Allergy and Clinical Immunology*, 143(2), AB45.

63. Cicardi M, Bellis P, Bertazzoni G, Cancian M, Chiesa M, Cremonesi P, et al. Guidance for diagnosis and treatment of acute angioedema in the emergency department: consensus statement by a panel of Italian experts. *Intern Emerg Med* 2014;9:85–92.
64. Johnston SL, Unsworth J, Gompels MM. Adrenaline given outside the context of life threatening allergic reactions. *BMJ*. 2003;326(7389):589-90.
65. ECC Committee, Subcommittee and Task Forces of the American Heart Association. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2005;112(24 Suppl):IV1-203.
66. Banerji A. Current treatment of hereditary angioedema: an update on clinical studies. *Allergy Asthma Proc* 2010;31:398–406.
67. Cruden NLM, Newby DE. Therapeutic potential of icatibant (HOE-140, JE-049). *Expert Opin Pharmacother* 2008;9:2383–90.
68. Bergamaschini L, Cicardi M. Recent advances in the use of C1 inhibitor as a therapeutic agent. *Mol Immunol* 2003;40:155-8.
69. Bork K, Frank J, Grundt B, Schlattmann P, Nussberger J, Kreuz W. Treatment of acute edema attacks in hereditary angioedema with a bradykinin receptor-2 antagonist (Icatibant). *J Allergy Clin Immunol* 2007;119(6):1497-503.
70. Betschel S, Badiou J, Binkley K, Hébert J, Kanani A, Keith P, et al. Canadian hereditary angioedema guideline. *Allergy Asthma Clin Immunol*. 2014;10(1):50.
71. Jose J, Zacharias J, Craig T. Review of select practice parameters, evidence-based treatment algorithms, and international guidelines for hereditary angioedema. *Clin Rev Allergy Immunol*. 2016; 51(2):193-206.
72. Wentzel, N., Panieri, A., Ayazi, M., Ntshalintshali, S. D., Pourpak, Z., Hawarden, D., ... & Peter, J. (2019). Fresh frozen plasma for on-demand hereditary angioedema treatment in South Africa and Iran. *World Allergy Organization Journal*, 12(9), 100049.
73. Sobash, P. T., Vedala, K., & Kamoga, G. R. (2021). Utilization of Tranexamic Acid for Recurrent Angioedema after ARB Discontinuation: A Case report and Review of the Literature. *Archives of Clinical and Medical Case Reports*, 5(1), 204-209