

**ALT ÜRİNER SİSTEM
ENFEKSİYONLARI**

Üriner sistem enfeksiyonu, üriner sistemi döşeyen epitelin patojenik invazyona karşı geliştirdiği enflamatuvar bir yanıt olarak tanımlanır. Kadın hastalarda poliklinik başvurusunun en sık nedenlerinden biri olup büyük çoğunluğu komplike olmayan akut sistitlerdir.

Mevcut kılavuzlar, üriner sistem enfeksiyonlarını sıklıkla komplike olmayan ve komplike idrar yolu enfeksiyonu (İYE) şeklinde sınıflandırmaktadır (**Tablo1**). Bunun yanı sıra, idrar yolu enfeksiyonunun anatomik seviyesi, enfeksiyonun ciddiyeti, risk faktörleri ve uygun antimikrobiyal tedavi seçenekleri temelinde farklı sınıflandırma sistemleri de bulunmaktadır.

Komplike Olmayan Sistitler

Komplike olmayan sistit, üriner sistemde bilinen herhangi bir anatomik veya fonksiyonel anormallik ya da komorbidite bulunmayan, gebe olmayan kadınlarla sınırlı olan akut, sporadik veya tekrarlayan sistit olarak tanımlanır.

Epidemiyoloji ve Etiyoloji

Kadınların neredeyse yarısı yaşamları boyunca en az bir kez sistit geçirirken, 24 yaşına kadar her üç kadından biri en az bir sistit atağı yaşamaktadır. Risk faktörleri arasında cinsel ilişki, spermisit kullanımı, yeni bir cinsel partner, annede üriner sistem enfeksiyonu öyküsü ve çocukluk döneminde İYE geçirme öyküsü yer almaktadır. Komplike olmayan sistit vakalarının büyük çoğunluğunda etken *Escherichia coli* (E. coli) olmaktadır.

Sistit en sık genç ve cinsel olarak aktif dönemde, özellikle 18-24 yaş arasında görülmektedir. 20-40 yaş arasındaki kadınların %25-30'u hayatlarında en az bir kez üriner enfeksiyon geçirmiştir. Bu oran aynı yaş grubundaki erkeklere kıyasla 30 ila 50 kat daha fazladır. Cinsel ilişki ve spermisit kullanımı en önemli risk faktörleri arasında yer alırken, annede sık üriner enfeksiyon öyküsü bulunması veya çocukluk çağında sık enfeksiyon geçirilmesi de risk faktörleri arasında bulunmaktadır.

Genç ve cinsel olarak aktif kadınlarda görülen sistit vakalarının %75-90'ının cinsel ilişki ile ilişkili olduğu gösterilmiştir. Cinsel ilişki bakterilerin üretra yoluyla geçişini kolaylaştırırken, spermisitler ise bakterilerin üroepitelyal yüzeye tutunmasını artırmaktadır.

¹ Doç. Dr., İstanbul Üniversitesi Cerrahpaşa, Cerrahpaşa Tıp Fakültesi, Üroloji AD., drsinharib@yahoo.com, ORCID iD: 0000-0002-3897-2951

² Yazar Bilgileri Eksik

Asemptomatik Bakteriüride Tedavi

Asemptomatik bakteriüri eradikasyonu planlanıyorsa antibiyotik seçimi ve tedavi süresi, hastanın tıbbi geçmişi ve risk faktörleri doğrultusunda belirlenmelidir. Tedavi ampirik değil, bireysel olarak düzenlenmelidir.

KAYNAKLAR

- Johansen TE, Botto H, Cek M, et al. Critical review of current definitions of urinary tract infections and proposal of an EAU/ESIU classification system. *Int J Antimicrob Agents*. 2011;38 Suppl:64-70.
- Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology Guidelines on Urological Infections: Summary of the 2024 Guidelines. *Eur Urol*. 2024;86(1):27-41. p.9
- Foxman B. Epidemiology of urinary tract infections: incidence, morbidity, and economic costs. *Dis Mon* 2003;49:53-70.
- Wagenlehner FM, Hoyme U, Kaase M, et al. Uncomplicated urinary tract infections. *Dtsch Arztebl Int*. 2011;108(24):415-423.
- Stamm WE, Hooton TM. Management of urinary tract infections in adults. *N Engl J Med*. 1993;329(18):1328-1334.
- Bent S, Nallamotheu BK, Simel DL, et al. Does this woman have an acute uncomplicated urinary tract infection?. *JAMA*. 2002;287(20):2701-2710.
- Fihn, S.D. Clinical practice. Acute uncomplicated urinary tract infection in women. *N Engl J Med*, 2003. 349: 259.
- Falagas ME, Kotsantis IK, Vouloumanou EK, et al. Antibiotics versus placebo in the treatment of women with uncomplicated cystitis: a meta-analysis of randomized controlled trials. *J Infect*. 2009;58(2):91-102.
- Vik I, Bollestad M, Grude N, et al. Ibuprofen versus pivmecillinam for uncomplicated urinary tract infection in women-A double-blind, randomized non-inferiority trial. *PLoS Med*. 2018;15(5):e1002569.
- Kaufner Y, Röver C, Heinz J, et al. Reducing antibiotic use in uncomplicated urinary tract infections in adult women: a systematic review and individual participant data meta-analysis. *Clin Microbiol Infect*. 2022;28(12):1558-1566.
- Gupta K, Hooton TM, Roberts PL, et al. Short-course nitrofurantoin for the treatment of acute uncomplicated cystitis in women. *Arch Intern Med*. 2007;167(20):2207-2212.
- Huttner A, Verhaegh EM, Harbarth S, et al. Nitrofurantoin revisited: a systematic review and meta-analysis of controlled trials. *J Antimicrob Chemother*. 2015;70(9):2456-2464.
- Warren JW, Abrutyn E, Hebel JR, et al. Guidelines for antimicrobial treatment of uncomplicated acute bacterial cystitis and acute pyelonephritis in women. Infectious Diseases Society of America (IDSA). *Clin Infect Dis*. 1999;29(4):745-758.
- Hooton TM, Roberts PL, Stapleton AE. Cefpodoxime vs ciprofloxacin for short-course treatment of acute uncomplicated cystitis: a randomized trial. *JAMA*. 2012;307(6):583-589.
- Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology Guidelines on Urological Infections: Summary of the 2024 Guidelines. *Eur Urol*. 2024;86(1):27-41.
- Geerts AF, Eppenga WL, Heerdink R, et al. Ineffectiveness and adverse events of nitrofurantoin in women with urinary tract infection and renal impairment in primary care. *Eur J Clin Pharmacol*. 2013;69(9):1701-1707.
- Hooton TM. Recurrent urinary tract infection in women. *Int J Antimicrob Agents*. 2001;17(4):259-268.
- Reyner K, Heffner AC, Karvetski CH. Urinary obstruction is an important complicating factor in patients with septic shock due to urinary infection. *Am J Emerg Med*. 2016;34(4):694-696.
- Heyns CF. Urinary tract infection associated with conditions causing urinary tract obstruction and stasis, excluding urolithiasis and neuropathic bladder. *World J Urol*. 2012;30(1):77-83.
- Spoorenberg V, Hulscher ME, Geskus RB, et al. Beter antibioticagebruik bij gecompliceerde urineweginfecties [Better antibiotic use in complicated urinary tract infections; multicentre cluster randomised trial of 2 improvement strategies]. *Ned Tijdschr Geneesk*. 2016;160:D460.
- Bader MS, Loeb M, Brooks AA. An update on the management of urinary tract infections in the era of antimicrobial resistance. *Postgrad Med*. 2017;129(2):242-258.
- Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology Guidelines on Urological Infections: Summary of the 2024 Guidelines. *Eur Urol*. 2024;86(1):27-41.
- Peterson J, Kaul S, Khashab M, Fisher A, Kahn JB. Identification and pretherapy susceptibility of pathogens in patients with complicated urinary tract infection or acute pyelonephritis enrolled in a clinical study in the United States from November 2004 through April 2006. *Clin Ther*. 2007;29(10):2215-2221.
- Bader MS, Hawboldt J, Brooks A. Management of complicated urinary tract infections in the era of antimicrobial resistance. *Postgrad Med*. 2010;122(6):7-15.
- Hooton TM. Recurrent urinary tract infection in women. *Int J Antimicrob Agents*. 2001;17(4):259-268.
- van Haarst EP, van Andel G, Heldeweg EA, Schlattmann TJ, van der Horst HJ. Evaluation of the diagnostic workup in young women referred for recurrent lower urinary tract infections. *Urology*. 2001;57(6):1068-1072.
- Cai T, Tamanini I, Collini L, et al. Management of Recurrent Cystitis in Women: When Prompt Identification of Risk Factors Might Make a Difference. *Eur Urol Focus*. 2022;8(5):1476-1482.
- Adatto K, Doebele KG, Galland L, Granowetter L. Behavioral factors and urinary tract infection. *JAMA*. 1979;241(23):2525-2526.
- Lumsden L, Hyner GC. Effects of an educational intervention on the rate of recurrent urinary tract infections in selected female outpatients. *Women Health*. 1985;10(1):79-86.
- Hooton TM, Vecchio M, Iroz A, et al. Effect of Increased

- Daily Water Intake in Premenopausal Women With Recurrent Urinary Tract Infections: A Randomized Clinical Trial. *JAMA Intern Med.* 2018;178(11):1509-1515.
31. Chen YY, Su TH, Lau HH. Estrogen for the prevention of recurrent urinary tract infections in postmenopausal women: a meta-analysis of randomized controlled trials. *Int Urogynecol J.* 2021;32(1):17-25.
 32. Dueñas-García OF, Sullivan G, Hall CD, et al. Pharmacological Agents to Decrease New Episodes of Recurrent Lower Urinary Tract Infections in Postmenopausal Women. A Systematic Review. *Female Pelvic Med Reconstr Surg.* 2016;22(2):63-69.
 33. Beerepoot MA, Geerlings SE, van Haarst EP, et al. Nonantibiotic prophylaxis for recurrent urinary tract infections: a systematic review and meta-analysis of randomized controlled trials. *J Urol.* 2013;190(6):1981-1989.
 34. Pinggera GM, Feuchtnner G, Frauscher F, et al. Effects of local estrogen therapy on recurrent urinary tract infections in young females under oral contraceptives. *Eur Urol.* 2005;47(2):243-249.
 35. Aziminia N, Hadjipavlou M, Philippou Y, et al. Vaccines for the prevention of recurrent urinary tract infections: a systematic review. *BJU Int.* 2019;123(5):753-768.
 36. Prattley S, Geraghty R, Moore M, et al. Role of Vaccines for Recurrent Urinary Tract Infections: A Systematic Review. *Eur Urol Focus.* 2020;6(3):593-604.
 37. Naber KG, Cho YH, Matsumoto T, et al. Immunoactive prophylaxis of recurrent urinary tract infections: a meta-analysis. *Int J Antimicrob Agents.* 2009;33(2):111-119.
 38. Lorenzo-Gómez MF, Foley S, Nickel JC, et al. Sublingual MV140 for Prevention of Recurrent Urinary Tract Infections [published correction appears in *NEJM Evid.* 2022 May;1(5):EVIDx2200081].
 39. Kranz J, Schmidt S, Schneidewind L. Current Evidence on Nonantibiotic Prevention of Recurrent Urinary Tract Infections. *Eur Urol Focus.* 2019;5(1):17-19.
 40. Canales J, Rada G. Are probiotics effective in preventing urinary tract infection?. ¿Son efectivos los probióticos en prevenir infecciones del tracto urinario?. *Medwave.* 2018;18(2):e7186.
 41. Hanson L, VandeVusse L, Jermé M, et al. Probiotics for Treatment and Prevention of Urogenital Infections in Women: A Systematic Review. *J Midwifery Womens Health.* 2016;61(3):339-355.
 42. Abdullatif VA, Sur RL, Eshaghian E, et al. Efficacy of Probiotics as Prophylaxis for Urinary Tract Infections in Premenopausal Women: A Systematic Review and Meta-Analysis. *Cureus.* 2021;13(10):e18843.
 43. Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology Guidelines on Urological Infections: Summary of the 2024 Guidelines. *Eur Urol.* 2024;86(1):27-41.
 44. Lutay N, Ambite I, Grönberg Hernandez J, et al. Bacterial control of host gene expression through RNA polymerase II. *J Clin Invest.* 2013;123(6):2366-2379.
 45. Nicolle LE, Bradley S, Colgan R, et al. Infectious Diseases Society of America guidelines for the diagnosis and treatment of asymptomatic bacteriuria in adults [published correction appears in *Clin Infect Dis.* 2005 May 15;40(10):1556]. *Clin Infect Dis.* 2005;40(5):643-654.
 46. KASS EH. Asymptomatic infections of the urinary tract. *Trans Assoc Am Physicians.* 1956;69:56-64.
 47. Wren BG. Subclinical renal infection and prematurity. *Med J Aust.* 1969;2(12):596-600.
 48. Mody L, Juthani-Mehta M. Urinary tract infections in older women: a clinical review. *JAMA.* 2014;311(8):844-854.
 49. Bonkat G, Widmer AE, Rieken M, et al. Microbial biofilm formation and catheter-associated bacteriuria in patients with suprapubic catheterisation. *World J Urol.* 2013;31(3):565-571.
 50. Kranz J, Bartoletti R, Bruyère F, et al. European Association of Urology Guidelines on Urological Infections: Summary of the 2024 Guidelines. *Eur Urol.* 2024;86(1):27-41.