

BÖLÜM 20



Kronik Böbrek Hastalığında Atrial Fibrilasyon Yönetimi

Murat PEHLİVAN¹

KRONİK BÖBREK HASTALIĞI TANIMI, EPİDEMİYOLOJİSİ VE RİSK FAKTÖRLERİ

Kronik böbrek hastalığı (KBH), nedene bakılmaksızın böbreğin üç ay ve daha fazla süre devam eden böbrek hasarı ve fonksiyonel anormallğine verilen isimdir. En az üç ay boyunca hasarın veya azalmış fonksiyonun devam etmesi, KBH'yi akut böbrek hastalığından ayırt etmek için gereklidir. Böbrek hasarını ortaya koyabilmek için böbrek biyopsisi, görüntüleme çalışmaları, idrar sedimenti anormallikleri veya idrar albümin atılımındaki artış oranları gibi belirteçlere ihtiyaç olabilir (Tablo 1). Azalan böbrek fonksiyonu, genellikle serum kreatinin ve birkaç mevcut denklemden biri kullanılarak hesap edilen azalmış glomerüler filtrasyon hızı (GFR) anlamına gelir. KBH tanısı konulabilmesi için GFR'nin üç aydan uzun süreyle 60 ml/dk/1.73 m² 'den düşük olması veya GFR'den bağımsız olarak böbrekte bir hasar bulunması gerekir.

TABLO 1: Kronik böbrek hastalığının tanı kriterleri

KBH Kriterleri (bunlardan en az birisi 3 aydan uzun süredir devam etmelidir)	
Böbrek hasar belirteçleri	Albüminüri (idrarla albümin atılımı ≥ 30 mg/24 saat; idrar albümin/kreatinin oranı ≥ 30 mg/gr) Tübüler bozukluğa bağlı gelişen elektrolit bozuklukları Histolojik olarak saptanmış anormallikler Görüntüleme ile saptanmış yapısal anormallikler İdrar sediment anormallikleri Böbrek nakli öyküsü
GFR azalması	GFR < 60 ml/dk/1.73 m ²

Kronik böbrek hastalığı, GFR ve yukarıda bahsedilen böbrek hasarlanma bulgularının varlığına göre evrelere ayrılmaktadır (Tablo 2). Tabloda da belirtildiği üzere evre 1 veya 2 KBH tanısı konabilmesi için böbrek hasarlanma belirteçlerinden en az bir tanesinin bulunması gerekmektedir.

¹ Uzm. Dr., Yozgat Boğazlıyan Devlet Hastanesi İç Hastalıkları Kliniği pehlivanmmurat@gmail.com

tikoagülanlara göre daha düşük kanama riski ile daha etkili emboli önleme sağladığı belirtilmiştir⁴⁸. Bu nedenle, oral antikoagülanlara mutlak kontrendikasyonu olan KBH hastalarına LAAO önerilebilir.

KAYNAKLAR

- Hill NR, Fatoba ST, Oke JL, et al. Global prevalence of chronic kidney disease - A systematic review and meta-analysis. *PLoS One*. 2016. doi:10.1371/journal.pone.0158765
- Süleymanlar G, Uta C, Arinsoy T, et al. A population-based survey of Chronic RENal Disease in Turkey-the CREDIT study. *Nephrol Dial Transplant*. 2011. doi:10.1093/ndt/gfq656
- CDC. Chronic Kidney Disease (CKD) Surveillance System. *Cdc*. 2017.
- Kjeldsen SE. Hypertension and cardiovascular risk: General aspects. *Pharmacol Res*. 2018. doi:10.1016/j.phrs.2017.11.003
- Süleymanlar G, Ateş K, Seyahi N. *Türkiye’de Nefroloji, Diyaliz ve Transplantasyon*; 2019.
- Correction to: 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients with Atrial Fibrillation: A Report of the American College of Cardiology/ American Heart Association Task Force on Clinical Practice Guidelines . *Circulation*. 2019. doi:10.1161/CIR.0000000000000719
- Ozcan C. Conduction Intervals and Atrial Fibrillation in Chronic Kidney Disease. *Am J Nephrol*. 2021. doi:10.1159/000516153
- Hart RG, Eikelboom JW, Brimble KS, et al. Stroke prevention in atrial fibrillation patients with chronic kidney disease. *Can J Cardiol*. 2013. doi:10.1016/j.cjca.2013.04.005
- Bansal N, Xie D, Tao K, et al. Atrial fibrillation and risk of ESRD in adults with CKD. *Clin J Am Soc Nephrol*. 2016. doi:10.2215/CJN.10921015
- Zimmerman D, Sood MM, Rigatto C, et al: Systematic review and meta-analysis of incidence, prevalence and outcomes of atrial fibrillation in patients on dialysis (Nephrology Dialysis Transplantation (2012) 27:10 (3816-3822)). *Nephrol Dial Transplant*. 2014. doi:10.1093/ndt/gfu331
- Bonde AN, Lip GYH, Kamper AL, et al. Renal function and the risk of stroke and bleeding in patients with atrial fibrillation: An observational cohort study. *Stroke*. 2016. doi:10.1161/STROKEAHA.116.014422
- Soliman EZ, Prineas RJ, Go AS, et al. Chronic kidney disease and prevalent atrial fibrillation: The Chronic Renal Insufficiency Cohort (CRIC). *Am Heart J*. 2010. doi:10.1016/j.ahj.2010.03.027
- Tveit DP, Hypolite IO, Hshieh P, et al. Chronic dialysis patients have high risk for pulmonary embolism. *Am J Kidney Dis*. 2002. doi:10.1053/ajkd.2002.32774
- Kaw D, Malhotra D. Platelet dysfunction and end-stage renal disease. *Semin Dial*. 2006. doi:10.1111/j.1525-139X.2006.00179.x
- Boriani G, Savelieva I, Dan GA, et al. Chronic kidney disease in patients with cardiac rhythm disturbances or implantable electrical devices: Clinical significance and implications for decision making- A position paper of the European Heart Rhythm Association endorsed by the Heart Rhythm Socie. *Europace*. 2015. doi:10.1093/europace/euv202
- St Peter WL, Sozio SM, Shafi T, et al. Patterns in blood pressure medication use in US incident dialysis patients over the first 6 months. *BMC Nephrol*. 2013. doi:10.1186/1471-2369-14-249
- Lin TT, Chiang JY, Liao MT, et al. Primary prevention of atrial fibrillation with beta-blockers in patients with end-stage renal disease undergoing dialysis. *Sci Rep*. 2015. doi:10.1038/srep17731
- Tanboğa İH, Topçu S, Aksakal E, et al. The Risk of Atrial Fibrillation With Ivabradine Treatment: A Meta-analysis With Trial Sequential Analysis of More Than 40000 Patients. *Clin Cardiol*. 2016. doi:10.1002/clc.22578
- Wang Z, Wang W, Li H, et al. Ivabradine and Atrial Fibrillation: A Meta-Analysis of Randomized Controlled Trials. *J Cardiovasc Pharmacol*. 2022;79(4):549-557. doi:10.1097/FJC.0000000000001209
- Navaravong L, Barakat M, Burgon N, et al. Improvement in estimated glomerular filtration rate in patients with chronic kidney disease undergoing catheter ablation for atrial fibrillation. *J Cardiovasc Electrophysiol*. 2015. doi:10.1111/jce.12530
- Turakhia MP, Blankestijn PJ, Carrero JJ, et al. Chronic kidney disease and arrhythmias: Conclusions from a Kidney Disease: Improving Global Outcomes (KDIGO) Controversies Conference. *Eur Heart J*. 2018. doi:10.1093/eurheartj/ehy060
- Patel MR, Mahaffey KW, Garg J, et al. Rivaroxaban versus Warfarin in Nonvalvular Atrial Fibrillation. *N Engl J Med*. 2011. doi:10.1056/nejmoa1009638
- Granger CB, Alexander JH, McMurray JJV, et al. Apixaban versus Warfarin in Patients with Atrial Fibrillation. *N Engl J Med*. 2011. doi:10.1056/nejmoa1107039
- Hindricks G, Potpara T, Dagres N, et al. Corrigendum to: 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS): The Task Force for the diagnosis and management of atrial fibrillation. *Eur Heart J*. 2021. doi:10.1093/eurheartj/ehab648
- Brancaccio D, Neri L, Bellocchio F, et al. Patients’ Characteristics Affect the Survival Benefit of Warfarin Treatment for Hemodialysis Patients with Atrial Fibrillation. A Historical Cohort Study. *Am J Nephrol*. 2016. doi:10.1159/000448898
- Nochaiwong S, Ruengorn C, Awiphan R, et al. Efficacy and safety of warfarin in dialysis patients with atrial fibrillation: A systematic review and meta-analysis. *Open Hear*. 2016. doi:10.1136/openhrt-2016-000441

27. Dahal K, Kunwar S, Rijal J, et al. Stroke, major bleeding, and mortality outcomes in warfarin users with atrial fibrillation and chronic kidney disease: A meta-analysis of observational studies. *Chest*. 2016. doi:10.1378/chest.15-1719
28. Tan J, Liu S, Segal JB, Alexander GC, et al. Warfarin use and stroke, bleeding and mortality risk in patients with end stage renal disease and atrial fibrillation: A systematic review and meta-analysis. *BMC Nephrol*. 2016. doi:10.1186/s12882-016-0368-6
29. Siltari A, Vapaatalo H. Vascular Calcification, Vitamin K and Warfarin Therapy – Possible or Plausible Connection? *Basic Clin Pharmacol Toxicol*. 2018. doi:10.1111/bcpt.12834
30. Chen J, Budoff MJ, Reilly MP, et al. Coronary artery calcification and risk of cardiovascular disease and death among patients with chronic kidney disease. *JAMA Cardiol*. 2017. doi:10.1001/jamacardio.2017.0363
31. AKAD SOYER N. Akılcı ilaç kullanımı: Yeni nesil oral antikoagülanlar. *Ege Tıp Derg*. 2021. doi:10.19161/etd.864141
32. Stangier J, Rathgen K, Stähle H, et al. Influence of Renal Impairment on the Pharmacokinetics and Pharmacodynamics of Oral Dabigatran Etexilate. *Clin Pharmacokinet*. 2010. doi:10.2165/11318170-000000000-00000
33. Awesat J, Sagy I, Haviv YS, et al. Dabigatran-induced nephropathy and its successful treatment with Idarucizumab - case report and literature review. *Thromb Res*. 2018. doi:10.1016/j.thromres.2018.07.019
34. Connolly SJ, Ezekowitz MD, Yusuf S, et al. Dabigatran versus Warfarin in Patients with Atrial Fibrillation. *N Engl J Med*. 2009. doi:10.1056/nejmoa0905561
35. Reddy ST, Cossey T, Savitz SI, et al. Non-Vitamin K Oral Anticoagulants (NOACs) and Their Reversal. *Curr Neurol Neurosci Rep*. 2017. doi:10.1007/s11910-017-0774-6
36. Hammett C, Badve S V, Kerr PG, et al. Oral Anticoagulant Use in Patients With Atrial Fibrillation and Chronic Kidney Disease: A Review of the Evidence With Recommendations for Australian Clinical Practice. *Hear Lung Circ*. November 2022. doi:10.1016/j.hlc.2022.09.003
37. Kubitz D, Becka M, Mueck W, et al. Effects of renal impairment on the pharmacokinetics, pharmacodynamics and safety of rivaroxaban, an oral, direct Factor Xa inhibitor. *Br J Clin Pharmacol*. 2010. doi:10.1111/j.1365-2125.2010.03753.x
38. Reed D, Palkimas S, Hockman R, et al. Safety and effectiveness of apixaban compared to warfarin in dialysis patients. *Res Pract Thromb Haemost*. 2018. doi:10.1002/rth2.12083
39. Mavrakanas TA, Samer CF, Nessim SJ, et al. Apixaban pharmacokinetics at steady state in hemodialysis patients. *J Am Soc Nephrol*. 2017. doi:10.1681/ASN.2016090980
40. Stanton BE, Barasch NS, Tellor KB. Comparison of the Safety and Effectiveness of Apixaban versus Warfarin in Patients with Severe Renal Impairment. *Pharmacotherapy*. 2017. doi:10.1002/phar.1905
41. BMS. ELIQUIS (Apixaban) Prescribing Information. *Fda*. 2016.
42. Giugliano RP, Ruff CT, Braunwald E, et al. Edoxaban versus Warfarin in Patients with Atrial Fibrillation. *N Engl J Med*. 2013. doi:10.1056/nejmoa1310907
43. Barnes GD, Kurtz B. Direct oral anticoagulants: Unique properties and practical approaches to management. *Heart*. 2016. doi:10.1136/heartjnl-2015-309075
44. Price MJ, Valderrábano M. Left atrial appendage closure to prevent stroke in patients with atrial fibrillation. *Circulation*. 2014. doi:10.1161/CIRCULATIONAHA.114.009060
45. Boersma L V, Ince H, Kische S, et al. Evaluating Real-World Clinical Outcomes in Atrial Fibrillation Patients Receiving the WATCHMAN Left Atrial Appendage Closure Technology. *Circ Arrhythm Electrophysiol*. 2019.
46. Black-Maier E, Piccini JP, Granger CB. Left atrial appendage closure: A therapy uniquely suited for specific populations of patients with atrial fibrillation. *J Cardiovasc Electrophysiol*. 2019. doi:10.1111/jce.14182
47. Kefer J, Tzikas A, Freixa X, et al. Impact of chronic kidney disease on left atrial appendage occlusion for stroke prevention in patients with atrial fibrillation. *Int J Cardiol*. 2016. doi:10.1016/j.ijcard.2016.01.003
48. Zhang HF, Zhang QX, Zhang YY, et al. Efficacy and safety of left atrial appendage occlusion in atrial fibrillation patients with chronic kidney disease: A systematic review and meta-analysis. *Rev Cardiovasc Med*. 2020. doi:10.31083/j.rcm.2020.03.62