Cardiovasc Perf Nurs 2022;1(4):79-81
http://dx.doi.org/DOI: 10.5606/e-cvpn.2022.264
http://e-cvpn.org/

CVPN

Editorial / Editöryal

OPEN ACCESS

New and changing information in the aortic disease guidelines

Aortik hastalık rehberlerinde değişen yeni bilgiler

Ertekin Utku Ünal

Department of Cardiovascular Surgery, Ufuk University, Ankara, Türkiye

Aortic diseases have long encountered significant challenges in the field of cardiovascular surgery, necessitating ongoing advancements in diagnostic techniques, treatment strategies, and surveillance measures. The emergence of new guidelines has provided a fresh perspective on managing these complex pathologies, ultimately leading to improved patient outcomes.[1]

Over the years, medical knowledge of aortic diseases has expanded significantly, resulting in a deeper understanding of their etiology, genetic involvement, pathophysiology, and optimal management approaches, including both surgical and endovascular interventions. This evolution has been fueled by advancements in imaging technologies, genetic studies, and therapeutic innovations, prompting the need for updated guidelines that incorporate these groundbreaking developments. Notably, there has been a considerable time gap of over 10 years since the previous guideline was established.[2] The past decade has witnessed a plethora of evidence-based research that has provided clinicians with valuable insights into aortic diseases. By closely examining the key elements and recommendations outlined in the recent guidelines, a paradigm shift is anticipated, bringing about significant implications for cardiovascular surgeons involved in the care of patients with aortic pathologies. These guidelines have the potential to profoundly impact clinical practice.

The recent guidelines primarily focus on three key messages: imaging, surgical thresholds, and family screening. Diagnostic strategies have undergone remarkable transformations with the introduction of novel imaging modalities, biomarkers, and genetic testing. The new guidelines underscore the importance of incorporating these state-of-the-art diagnostic tools to facilitate accurate and timely detection of aortic diseases. To ensure comprehensive evaluation and monitoring of patients with aortic disease, adherence to recommended protocols is crucial, including the acquisition, measurement, and reporting of aortic dimensions using computed tomography, magnetic resonance imaging, and echocardiographic imaging. Consistency in surveillance imaging by employing the same imaging modality and operator is also emphasized.

When dealing with patients suspected or diagnosed with aortic disease, precise measurement techniques are of utmost importance. It is crucial to measure aortic diameters at reproducible anatomical landmarks perpendicular to the axis of blood flow while considering asymmetric or oval contours by documenting both the longest diameter and its perpendicular counterpart. For patients undergoing computed tomography or magnetic resonance imaging, measuring the root and ascending aorta diameters from inner edge to inner edge using

Received: June 25, 2023 ***Accepted:*** July 03, 2023 ***Published online:*** July 26, 2023

Corresponding author: Ertekin Utku Ünal, MD. Ufuk Üniversitesi Tıp Fakültesi, Kalp ve Damar Cerrahisi Anabilim Dalı, 06530 Çankaya, Ankara, Türkiye.
E-mail: utkuunal@gmail.com

Citation:
Ünal EU. New and changing information in the aortic disease guidelines. Cardiovasc Perf Nurs 2022;1(4):79-81. doi: 10.5606/e-cvpn.2022.264.

an electrocardiographic synchronized approach is recommended. Additionally, in cases where aortic wall abnormalities such as atherosclerosis or discrete wall thickening are present, reporting the outer edge-to-outer edge diameter is essential. The guidelines also highlight the significance of reporting multiple measurements for the aortic root, given its potential asymmetry, particularly in individuals with bicuspid valves. This can include documenting each of the sinus-to-sinus diameters or providing both the short-axis and long-axis diameters.

The therapeutic landscape has also undergone a significant revolution, with a focus on tailored interventions that optimize patient outcomes. The new guidelines advocate for a multidisciplinary approach, lowering surgical thresholds under specific circumstances and integrating surgical techniques with endovascular interventions. In recent developments, centers with multidisciplinary aortic teams and experienced surgeons have revised the surgical intervention threshold for sporadic aortic root and ascending aortic aneurysms. The threshold has been lowered from 5.5 cm to 5.0 cm in select individuals and even further in specific scenarios for patients with heritable thoracic aortic aneurysms. Furthermore, in patients who deviate significantly from average height or body size, surgical thresholds may incorporate the indexing of aortic root or ascending aortic diameter to either patient body surface area or height, as well as the consideration of aortic cross-sectional area in relation to patient height. The guidelines also provide an updated definition of rapid aneurysm growth rate, which serves as a risk factor for rupture. Surgical intervention is now recommended for patients with aortic root and ascending thoracic aorta aneurysms if there is confirmed growth of ≥0.3 cm per year over two consecutive years or ≥0.5 cm within a single year. This revised definition highlights the importance of proactive management and surgical intervention for individuals at risk of rapid aneurysm growth, with the aim of reducing the potential for rupture and associated complications.

To identify individuals at high risk for aortic disease, the guidelines recommend screening first-degree relatives of patients diagnosed with aneurysms of the aortic root or ascending thoracic aorta, as well as those with aortic dissection. Importantly, screening of first-degree relatives of patients with thoracic aortic disease is strongly recommended, even in the absence of a family history of the disease or known genetic cause. This screening process entails a combination of genetic testing for familial inheritable thoracic aortic disease and imaging. A considerable number of asymptomatic individuals are at an elevated risk of aortic complications and mortality, despite not having a confirmed diagnosis of thoracic aortic disease. Consequently, expanding screening protocols to encompass more distant relatives of patients diagnosed with bicuspid aortic valve, thoracic aortic aneurysms, and thoracic aortic dissection is advisable.

In summary, the new guidelines for aortic diseases mark a significant milestone in the management of these complex pathologies. By embracing the transformative insights they provide, this editorial aims to inspire cardiovascular surgeons to adopt these guidelines, fostering continuous improvement in the care of patients with aortic diseases and leading to enhanced clinical outcomes. The guidelines have also reshaped therapeutic approaches and surgical cutoff levels, with a focus on tailored interventions that optimize patient outcomes. Furthermore, in the coming years, it is essential to consider factors beyond diameter and growth rate, such as aortic length, tortuosity, and the identification of aortic wall stress.[3] The multidisciplinary approach advocated by the guidelines encourages collaboration among healthcare providers, ensuring comprehensive patient-centered care that drives superior results. By embracing these guidelines and fostering collaboration, we can continue to push the boundaries of knowledge and pave the way for a future where patients with aortic diseases receive the highest standard of care.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest: The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding: The authors received no financial support for the research and/or authorship of this article.

REFERENCES

1. Isselbacher EM, Preventza O, Hamilton Black Iii J, Augoustides JG, Beck AW, Bolen MA, et al. 2022 ACC/AHA guideline for the diagnosis and management of aortic disease: A report of the American Heart Association/American College of Cardiology Joint Committee on Clinical Practice Guidelines. J Am Coll Cardiol 2022;80:e223-e393. doi: 10.1016/j.jacc.2022.08.004.

2. Hiratzka LF, Bakris GL, Beckman JA, Bersin RM, Carr VF, Casey DE Jr, et al. 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM Guidelines for the diagnosis and management of patients with thoracic aortic disease. A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, American College of Radiology,American Stroke Association, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society of Interventional Radiology, Society of Thoracic Surgeons,and Society for Vascular Medicine. J Am Coll Cardiol 2010;55:e27-e129. doi: 10.1016/j.jacc.2010.02.015.
3. Elefteriades JA, Ziganshin BA, Zafar MA. Nonsize criteria for surgical intervention on the ascending thoracic aorta. Aorta (Stamford) 2023;11:71-86. doi: 10.1055/s-0043-1766114.