Journal of Taibah University Medical Sciences (2026) 21(4), 663–664

Taibah University

Journal of Taibah University Medical Sciences

www.sciencedirect.com



Letter to the Editor

Before atrial fibrillation is attributed to e-cigarettes, alternative triggers must be thoroughly ruled out

Josef Finsterer, MD, PhD [a,*] and Claudia Stollberger, MD [b]

[a] *Neurology Dpt., Neurology & Neurophysiology Center, Vienna, Austria*
[b] *Institut Gesünder Leben, Vienna, Austria*

Received 15 May 2026; revised 2 June 2026; accepted 4 June 2026; Available online 18 June 2026

Keywords: Atrial fibrillation; Differential diagnoses; Dizziness; e-cigarettes; Side effects

© 2026 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

We read with interest the article by Alzahrani et al. about a 26-year-old man who developed dizziness and palpitations shortly after heavy e-cigarette use.[1] Since ECG monitoring showed a brief episode of atrial fibrillation, his symptoms were attributed to the arrhythmia after adequate exclusion of numerous differential diagnoses, and he was advised to stop using e-cigarettes and reduce caffein consumption.[1] The study is compelling but requires further discussion.

First, alternative triggers of atrial fibrillation could be more extensively considered.[1] These include electrolyte imbalances, congenital heart defects, hypertension, hypoxia, pulmonary disease, sleep apnea, subclinical viral infections, insomnia, excessive caffeine consumption, stress and worry, or strenuous physical exertion.[2] Should further episodic arrhythmias occur, these alternative causes could become relevant.

Secondly, coronary artery disease was considered but not further investigated due to the absence of clinical evidence.[1] However, since e-cigarette use can be associated with coronary spasms and coronary artery anomalies can become symptomatic due to e-cigarette use,[3] coronary anomalies should be considered if cardiac symptoms recur.

The third point is that in case of well-founded clinical suspicion genetic causes of atrial fibrillation could have been considered.[1] Numerous genetic disorders can manifest with atrial fibrillation as the first clinical symptom.[4] Was the family history positive for cardiac disease in any of the first-degree relatives? Genetic disorders commonly associated with arrhythmias including short QT syndrome, long QT syndrome, Brugada syndrome, catecholaminergic polymorphic ventricular arrhythmia, and neuromuscular disorders with cardiac involvement.[4]

The fourth point is that the patient did not undergo toxicological screening. Even if he claims to have no connection with alcohol or illicit drugs, it would have been advisable to rule out clandestine drug use. These can frequently trigger cardiac arrhythmias.[5]

The fifth point is that the patient did not undergo long-term ECG (loop recording). As with patients with embolic stroke of unknown origin (ESUS), the patient could have been fitted with an event recorder to detect subclinical episodes of atrial fibrillation or ventricular arrhythmias. The statement that further asymptomatic episodes of atrial fibrillation are unlikely because the patient exhibited clear symptoms during the episode of atrial fibrillation is not plausible. A patient can have both symptomatic and asymptomatic atrial fibrillation.[6]

The sixth point is that the cause of the dizziness was not sufficiently investigated. Was the dizziness temporally related to the onset and resolution of the episodic cardiac arrhythmias? Did it last as long as the arrhythmias? If the dizziness and arrhythmias were not temporally related, cerebrovascular and otological causes of the dizziness should be considered. Dizziness can be caused not only by heart disease

* Corresponding address: Neurology Dpt., Neurology & Neurophysiology Center, Postfach 20, 1180, Vienna, Austria.
E-mail: fifigs1@yahoo.de (J. Finsterer)

Peer review under responsibility of Taibah University.

Production and hosting by Elsevier

1658-3612 © 2026 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/). https://doi.org/10.1016/j.jtumed.2026.06.001

but numerous other neurological or non-neurological disorders.

Finally, the component of the e-cigarette that may have triggered atrial fibrillation could not be identified. Because e-cigarettes consist of several components, it would be useful to determine the most cardiotoxic ones. Causality between e-cigarette consumption and the occurrence of arrhythmias should be cautiously interpreted.

Source of funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Consent to participation

Not applicable.

Consent for publication

Not applicable.

Authors contributions

JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. CS: contributed to literature search, discussion, correction, and final approval. All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

Availability of data and material

All data are available from the corresponding author.

References

1. Alzahrani T. New-onset atrial fibrillation in a healthy young adult following electronic cigarette use. **J Taibah Univ Med Sci 2026 Jan 24**; 21(1): 135–138. https://doi.org/10.1016/j.jtumed.2025.12.010.
2. Boriani G, Mei DA, Vitolo M, Imberti JF. The 2024 ESC guidelines on atrial fibrillation: essential updates for everyday clinical practice. **Intern Emerg Med 2025 Aug**; 20(5): 1299–1306. https://doi.org/10.1007/s11739-025-04006-1.
3. Glenski TA, Dorris CE, Patel GM, Taylor CM, Doyle NM. Vaping associated cardiac arrest at school in a teenager with anomalous left coronary artery. **Mo Med 2021 Sep-Oct**; 118(5): 450–452.
4. Lubitz SA, Yi BA, Ellinor PT. Genetics of atrial fibrillation. **Heart Fail Clin 2010 Apr**; 6(2): 239–247. https://doi.org/10.1016/j.hfc.2009.12.004.
5. Gawałko M, Sanders P. Drug abuse and risk of atrial fibrillation: a neglected association. **Eur Heart J 2022 Dec 14**; 43(47): 4943–4945. https://doi.org/10.1093/eurheartj/ehac614.
6. Boriani G, Bonini N, Vitolo M, Mei DA, Imberti JF, Gerra L, et al. Asymptomatic vs. symptomatic atrial fibrillation: clinical outcomes in heart failure patients. **Eur J Intern Med 2024 Jan**; 119: 53–63. https://doi.org/10.1016/j.ejim.2023.09.009.

How to cite this article: Finsterer J, Stollberger C. Before atrial fibrillation is attributed to e-cigarettes, alternative triggers must be thoroughly ruled out. J Taibah Univ Med Sc 2026;21(4):663–664.