



Comment

How to Improve Clinical Outcomes in Patients with Tachycardia-Induced Cardiomyopathy. Comment on Katz et al. Long-Term Outcomes of Tachycardia-Induced Cardiomyopathy Compared with Idiopathic Dilated Cardiomyopathy. *J. Clin. Med.* 2023, 12, 1412

Naoya Kataoka and Teruhiko Imamura *

Second Department of Internal Medicine, University of Toyama, Toyama 930-0194, Japan

* Correspondence: teimamu@med.u-toyama.ac.jp; Tel.: +81-76-434-2281; Fax: +81-76-434-5026

The clinical course of tachycardia-induced cardiomyopathy (TICM) has not yet been well studied thus far. Katz and colleagues showed that patients with TICM had a statistically comparable prognosis to those with idiopathic dilated cardiomyopathy (IDCM) [1]. Several concerns have been raised to strengthen their findings and deepen this discussion.

The definitions of each disease (i.e., TICM and IDCM) may be unclear. In their study, the patients who achieved an improvement in the left ventricular ejection fraction (LVEF) >15% due to rate control or rhythm control were assigned to the TICM group [1]. Here, four patients received cardiac resynchronization therapy, which often improves cardiac function by improving cardiac dyssynchrony. Such patients may not have TICM. In the IDCM group, patients with tachycardia were excluded [1]. However, five patients with an atrial fibrillation or atrial flutter were also included in this group. These arrhythmias, even if they are paroxysmal ones, can have a negative impact on the LVEF. Not all asymptomatic tachycardia cases can be detected without cardiovascular implantable electronic devices. We propose the definition of TICM patients as those with an improvement in LV systolic function following the elimination of the arrhythmias without using any devices that affect ventricular function [2].

Another concern is a therapeutic strategy used for those with an impaired LVEF and atrial fibrillation. In their study, 22% of the TICM patients died during a 6-year observation period, despite a median improvement in the LVEF of up to 55% [1]. This mortality rate is higher than those in other previous large-scale studies [3]. Could the authors explain this discrepancy? One explanation could be a difference in the therapeutic strategy for patients with an impaired LVEF and atrial fibrillation. In the current era following the prospective randomized trial entitled Catheter Ablation for Atrial Fibrillation with Heart Failure (CASTLE-AF) [3], catheter ablation is highly recommended for such clinical situations [4,5]. Medical intervention to control rate/rhythm does not have a positive prognostic impact in this cohort [6]. However, only 20% of their cohort received catheter ablation. Catheter ablation should also reduce the incidence of recurrent arrhythmias that require re-hospitalization.

Finally, guideline-directed medical therapy, such as the fantastic four, is highly recommended for patients with heart failure with a reduced LVEF [7]. Could the authors clarify the medication list, including mineralocorticoid receptor antagonists and sodium-coupled glucose transporter 2 inhibitors? Beta blockers were prescribed in 35% of the patients, and renin-angiotensin system inhibitors were prescribed in 27% [1].

Conflicts of Interest: The authors declare no conflict of interest.



Citation: Kataoka, N.; Imamura, T. How to Improve Clinical Outcomes in Patients with Tachycardia-Induced Cardiomyopathy. Comment on Katz et al. Long-Term Outcomes of Tachycardia-Induced Cardiomyopathy Compared with Idiopathic Dilated Cardiomyopathy. *J. Clin. Med.* 2023, 12, 1412. *J. Clin. Med.* 2023, 12, 5065. <https://doi.org/10.3390/jcm12155065>

Academic Editor: Ibrahim Marai

Received: 14 March 2023

Revised: 17 May 2023

Accepted: 28 July 2023

Published: 1 August 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

References

1. Katz, M.; Meitus, A.; Arad, M.; Aizer, A.; Nof, E.; Beinart, R. Long-Term Outcomes of Tachycardia-Induced Cardiomyopathy Compared with Idiopathic Dilated Cardiomyopathy. *J. Clin. Med.* **2023**, *12*, 1412. [[CrossRef](#)]
2. Huizar, J.F.; Ellenbogen, K.A.; Tan, A.Y.; Kaszala, K. Arrhythmia-Induced Cardiomyopathy: JACC State-of-the-Art Review. *J. Am. Coll. Cardiol.* **2019**, *73*, 2328–2344. [[CrossRef](#)] [[PubMed](#)]
3. Marrouche, N.F.; Brachmann, J.; Andresen, D.; Siebels, J.; Boersma, L.; Jordaens, L.; Merkely, B.; Pokushalov, E.; Sanders, P.; Proff, J.; et al. Catheter Ablation for Atrial Fibrillation with Heart Failure. *N. Engl. J. Med.* **2018**, *378*, 417–427. [[CrossRef](#)]
4. Koi, T.; Kataoka, N.; Imamura, T.; Kinugawa, K. Drastic Cardiac Reverse Remodeling Following Catheter Ablation in Patients with Atrial Fibrillation and Heart Failure. *Medicina* **2021**, *57*, 511. [[CrossRef](#)] [[PubMed](#)]
5. Simader, F.A.; Howard, J.P.; Ahmad, Y.; Saleh, K.; Naraen, A.; Samways, J.W.; Mohal, J.; Reddy, R.K.; Kaza, N.; Keene, D.; et al. Catheter ablation improves cardiovascular outcomes in patients with atrial fibrillation and heart failure: A meta-analysis of randomized controlled trials. *Europace* **2023**, *25*, 341–350. [[CrossRef](#)]
6. Roy, D.; Talajic, M.; Nattel, S.; Wyse, D.G.; Dorian, P.; Lee, K.L.; Bourassa, M.G.; Arnold, J.M.; Buxton, A.E.; Camm, A.J.; et al. Rhythm control versus rate control for atrial fibrillation and heart failure. *N. Engl. J. Med.* **2008**, *358*, 2667–2677. [[CrossRef](#)]
7. Heidenreich, P.A.; Bozkurt, B.; Aguilar, D.; Allen, L.A.; Byun, J.J.; Colvin, M.M.; Deswal, A.; Drazner, M.H.; Dunlay, S.M.; Evers, L.R.; et al. 2022 AHA/ACC/HFSA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *J. Am. Coll. Cardiol.* **2022**, *79*, e263–e421. [[PubMed](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.