

Improved life expectancy in patients after dual-chamber pacemaker implantation

Annamaria Kosztin, Andras Mihaly Boros, Eperke Merkel, Walter R. Schwertner, Anett Behon, Bela Merkely

Semmelweis University, Heart and Vascular Center, Budapest, Hungary

RELATED ARTICLE page 683

The study of Dębski et al¹ investigated the lifespan and life expectancy of patients undergoing double-chamber (DDD) pacemaker implantation due to bradycardia in a specific region of Poland (Małopolska Province) over the period of 15 years (1999–2015). The study assessed mortality trends in a high-volume single-center setting. Patients treated between 1984 and 2014 were retrospectively analyzed. Based on their last follow-up visit and time of death, the standard expected years of life lost were calculated.

The main strength of the analysis is that it clearly demonstrates an improvement of life expectancy in patients after DDD pacemaker implantation, which corresponds to early Medicare data.² Interestingly, this finding has been shown despite the gradually increasing age of the recipients. Moreover, not only the age at implantation, age at death, and average lifespan were shown to increase in the study population, but the years of life lost per death were reported to decrease. Schmidt et al³ obtained similar results and concluded that pacemakers are a clinically and economically effective therapeutic option in the elderly as well.

The above positive trends have been found to be stronger in men than in women, but this shall be an extraordinary result considering the literature data.⁴ The more specific results revealed that the mean age at implant increased from 70 years in 1999 to 75.5 years in 2015 (average annual percentage change [AAPC], 0.6%; $P < 0.05$), the number of years lived after DDD pacemaker implantation rose from 2.6 years to 8.2 years (AAPC, 7.4%; $P < 0.05$), and the mean age at death dropped from 72.6 years to 83.8 years (AAPC, 0.89%; $P < 0.05$).

The background and the reason behind these findings are partly discussed in the article by Dębski et al¹. The authors concluded that the state-of-the-art cardiology care, the national economic transformation, and the overall improvement in the healthcare system, as well as behavioral and lifestyle changes are responsible for the favorable outcome. In agreement with the authors,¹ the improving medical service could be the key point in the better survival of pacemaker patients, especially in those cases where the patients are followed in a tertiary center.

However, there are some important limitations that might bias the results, besides the already noted factors in the article.¹ On one hand, there might be a selection bias in the elderly population that could be candidates for DDD pacemakers. Balancing between the risks and benefits and the subsequent complaints, physicians might decide to implant ventricular demand (VVI) pacemakers. Thus, the investigated population might have a better outcome. On the other hand, ischemic etiology, which is a relatively frequent cause of bradycardia, was not investigated in the current analysis. It should be noted that the increasing effectiveness of invasive treatment of coronary artery disease over time could have an impact on the results.

Nevertheless, since the results are derived from a retrospective analysis, further studies are warranted. Altogether, these data are essential in describing the tendency for patients' life expectancy after a DDD pacemaker implantation regardless of the etiology of the indication. To date, no such clear estimations have been published, and it is also important to see the overall mortality rate in this patient population by sex.

Correspondence to:
Bela Merkely, MD, PhD, DSc,
Semmelweis University,
Heart and Vascular Center,
Varosmajor str. 68, Budapest,
Hungary, phone: +361 458 6810,
email: merkely.study@gmail.com

Received: June 26, 2019.

Accepted: June 27, 2019.

Published online:

August 23, 2019.

Kardiologia Pol. 2019; 77 (7-8): 659-660

doi:10.33963/KP.14938

Copyright by the Author(s), 2019

ARTICLE INFORMATION

DISCLAIMER The opinions expressed by the author are not necessarily those of the journal editors, Polish Cardiac Society, or publisher.

CONFLICT OF INTEREST BM received direct lecture fee from Biotronik, Medtronic, and Abbott as well as institutional payment or grant from Boston Scientific, Medtronic, and Abbott.

OPEN ACCESS This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0), allowing third parties to download articles and share them with others, provided the original work is properly cited, not changed in any way, distributed under the same license, and used for non-commercial purposes only. For commercial use, please contact the journal office at kardiologiapolska@ptkardio.pl.

HOW TO CITE Kosztin A, Boros AM, Merkel E, et al. Improved life expectancy in patients after dual-chamber pacemaker implantation. *Kardiol Pol.* 2019; 77: 659-660. doi:10.33963/KP.14938

REFERENCES

- 1 Dębski M, Maniecka-Bryła I, Dżiankowska-Zaborszczyk E, et al. Years of life lost as a measure of premature death among dual-chamber pacemaker recipients from Małopolska Province. *Kardiol Pol.* 2019; 77: 683-687.
- 2 Lamas GA, Pashos CL, Normand SL, McNeil B. Permanent pacemaker selection and subsequent survival in elderly Medicare pacemaker recipients. *Circulation.* 1995; 91: 1063-1069.
- 3 Schmidt B, Brunner M, Olschewski M, et al. Pacemaker therapy in very elderly patients: long-term survival and prognostic parameters. *Am Heart J.* 2003; 146: 908-913.
- 4 Brunner M, Olschewski M, Geibel A, et al. Long-term survival after pacemaker implantation. Prognostic importance of gender and baseline patient characteristics. *Eur Heart J.* 2004; 25: 88-95.