



Patient-reported outcomes from the ENVISAGE-TAVI AF trial using the win ratio analysis

Christian Hengstenberg¹, Nicolas M. Van Mieghem², Rosa Wang³, Weiqin Liao⁴, Ling Shi⁴, Shien Guo⁴,
Cathy Chen³, Xin Ye³, George Dangas^{5,6}, Martin Unverdorben³

¹Division of Cardiology, Department of Internal Medicine II, Vienna General Hospital, Medical University, Vienna, Austria; ²Department of Cardiology, Erasmus University Medical Center, Thoraxcenter, Rotterdam, the Netherlands;
³Daiichi Sankyo, Inc., Basking Ridge, New Jersey, United States; ⁴Clinical Outcomes Analytics, Evidera PPD, LLC, Bethesda, Maryland, United States; ⁵Zena and Michael A. Wiener Cardiovascular Institute, Mount Sinai Hospital,
New York, New York, United States; ⁶School of Medicine, National and Kapodistrian University of Athens, Athens, Greece



Speaker's name: Christian Hengstenberg

☑ Clinical proctor for Boston Scientific and Edwards Lifesciences and reports payment for speaker bureaus, support for attending meetings, and advisory board participation from Daiichi Sankyo, as well as institutional funding from Abbott Vascular, Amgen, Biosensors, Biotronik, Boehringer Ingelheim, Boston Scientific, Daiichi Sankyo, Edwards Lifesciences, Ferrer, Medtronic, Novartis, Philips, Siemens, and Terumo

Why this study?

- Up to 40% of patients who undergo transcatheter aortic valve implantation (TAVI) have atrial fibrillation and are therefore recommended for chronic oral anticoagulation¹⁻⁷
- Patient-reported outcomes (PROs) help physicians understand treatment impact on patient well-being and potential treatment influence on medication adherence and persistence^{8,9}
- In the ENVISAGE-TAVI AF (NCT02943785) trial, patients with prevalent or incident atrial fibrillation who were treated with edoxaban after successful TAVI reported significantly improved treatment satisfaction and convenience compared with those receiving vitamin K antagonists (VKAs)¹⁰
- However, conventional PROs are often difficult to interpret without validated clinically meaningful thresholds, and aggregated domain scores preclude identifying drivers of treatment differences

PRO, patient-reported outcome; TAVI, transcatheter aortic valve implantation; VKA, vitamin K antagonist.

1. Adams DH, et al. *N Engl J Med.* 2014;370(19):1790-8. 2. Leon MB, et al. *N Engl J Med.* 2010;363(17):1597-607. 3. Smith CR, et al. *N Engl J Med.* 2011;364(23):2187-98. 4. Leon MB, et al. *N Engl J Med.* 2016;374(17):1609-20. 5. Reardon MJ, et al. *N Engl J Med.* 2017;376(14):1321-31. 6. Mack MJ, et al. *N Engl J Med.* 2019;380(18):1695-705. 7. Popma JJ, et al. *N Engl J Med.* 2019;380(18):1706-15. 8. Benzimra M, et al. *Patient Prefer Adherence.* 2018;12:79-87. 9. Ng DL, et al. *Patient Prefer Adherence.* 2019;13:1363-73. 10. Hengstenberg C, et al. *Am J Cardiol.* 2023;209:212-19.

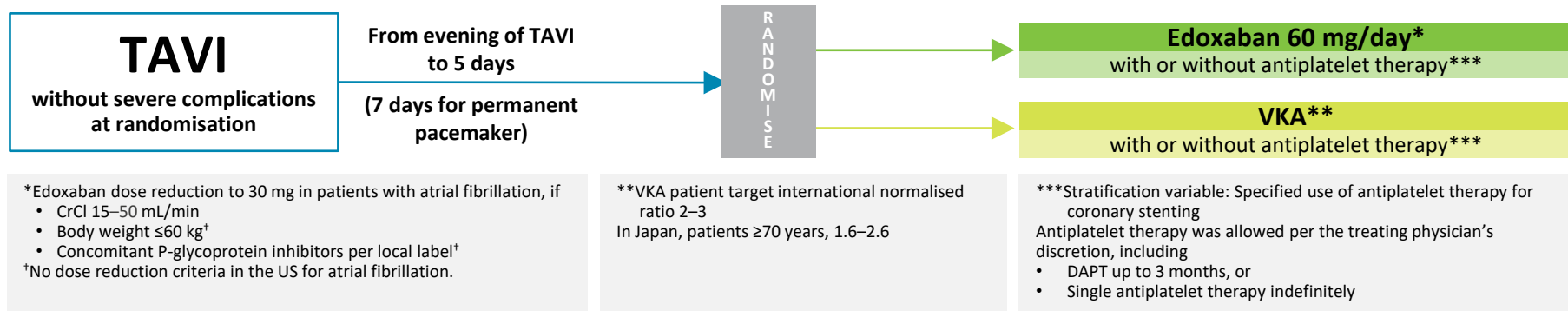
What did we study?

Objective

- To evaluate the drivers of PROs in patients with atrial fibrillation receiving edoxaban vs VKAs after successful TAVI using a win ratio (WR) analytical approach

ENVISAGE-TAVI AF trial design

Prospective, randomised trial comparing the efficacy and safety of edoxaban vs VKA in patients with prevalent or incident atrial fibrillation and indication for chronic oral anticoagulation therapy after successful TAVI (NCT02943785)^{1,2}



CrCl, creatinine clearance; DAPT, dual antiplatelet therapy; PRO, patient-reported outcome; TAVI, transcatheter aortic valve implantation; VKA, vitamin K antagonist; WR, win ratio.

1. Van Mieghem NM, et al. *Am Heart J.* 2018;205:63–9. 2. Van Mieghem NM, et al. *N Engl J Med.* 2021;385:2150–60.

How was the study executed?

- In this intention-to-treat ENVISAGE TAVI-AF subanalysis, we included patients who received either edoxaban or VKAs and had evaluable PACT-Q2 data from their 12-month post-baseline visit
- The PACT-Q2 assesses the following 2 dimensions using a 5-point Likert scale in each item to capture distinct patient experiences with treatment¹
 - Treatment convenience (13 items)
 - Treatment satisfaction (7 items)

Win ratio statistical analysis

- Pairwise comparisons of treatment groups were performed using WR, an established method in cardiovascular research,² at instrument, dimension, and item levels
- The WR calculated the odds of edoxaban being favoured over VKAs ($WR > 1$), based on a set of prespecified outcome criteria meaningful to patients, from every possible patient pair between treatment groups
- The WR was calculated as follows: $WR = N_W/N_L$, where WR indicates win ratio; N_W , number of wins; and N_L , number of losses

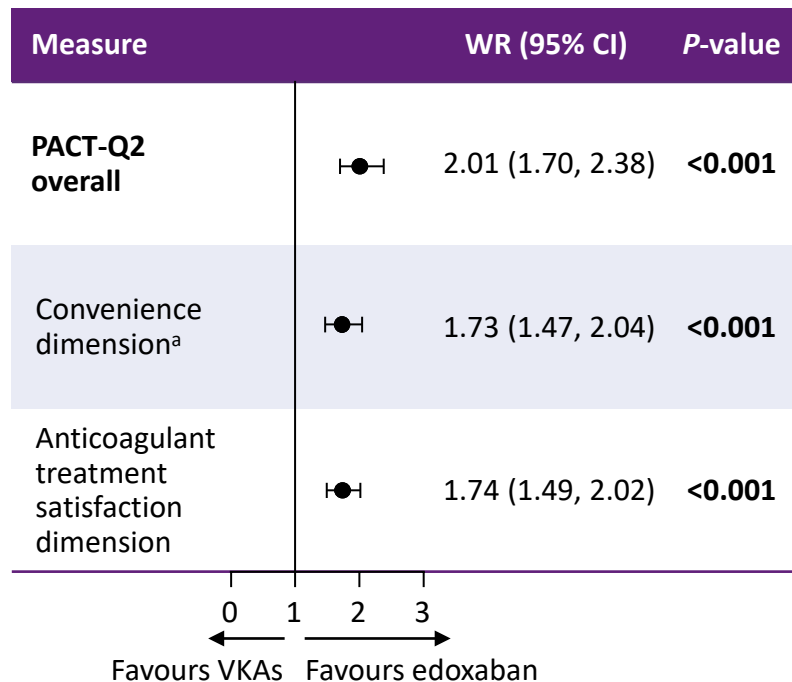
PACT-Q2, Perception Anticoagulant Treatment Questionnaire 2; TAVI, transcatheter aortic valve implantation; VKA, vitamin K antagonist; WR, win ratio.

1. Prins MH, et al. *Health Qual Life Outcomes*. 2009;6:7:9. 2. Redfors B, et al. *Eur Heart J*. 2020;41(46):4391-99.

What are the essential results?

Overall and dimension level WR outcomes at month 12

- The baseline characteristics and treatment expectations were similar between both edoxaban and VKA treatment groups (n = 713 for each group)¹
- A significantly higher probability of improved overall treatment convenience or satisfaction was associated with edoxaban vs VKAs
- At the dimension level, a significantly higher probability of improved convenience and treatment satisfaction occurred for edoxaban vs VKAs

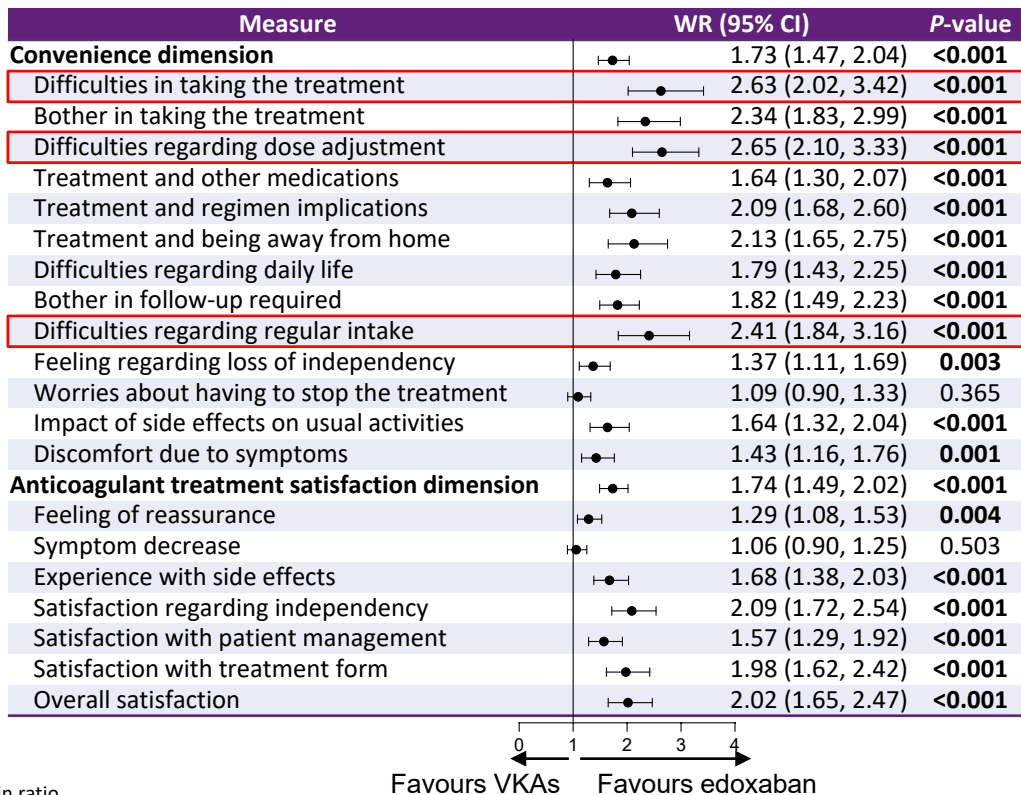


^aConvenience dimension includes the convenience domain and burden of disease and treatment domain.
CI, confidence interval; PACT-Q2, Perception Anticoagulant Treatment Questionnaire 2; VKA, vitamin K antagonist; WR, win ratio.
1. Van Mieghem NM, et al. *N Engl J Med.* 2021;385:2150–60.

What are the essential results?

Item-level WR outcomes at month 12

- Edoxaban compared with VKAs exhibited a significantly higher probability of having meaningfully favourable PROs in 18 of the 20 items:
 - Convenience dimension, 12 of 13 items
 - Anticoagulant treatment satisfaction dimension, 6 of 7 items
- The top 3 drivers of treatment differences with edoxaban favoured over VKAs were
 - Difficulties regarding dose adjustment
 - Difficulties in taking the treatment
 - Difficulties regarding regular intake
- Dose adjustment increased the difficulty level of treatment intake perceived by patients



CI, confidence interval; PRO, patient-reported outcome; VKA, vitamin K antagonist; WR, win ratio.

Why is this important?

- This study stands out as a pioneering effort in its application of the WR analytical approach to PROs, distinguishing itself from previous WR research, which focused on conventional clinical outcome assessments
- Meaningfully favourable PROs were identified at dimension and item levels
- These findings may assist physicians when considering anticoagulation options for patients with atrial fibrillation after TAVI

PRO, patient-reported outcome; TAVI, transcatheter aortic valve implantation; WR, win ratio.

The essentials to remember

- PROs were captured by PACT-Q2 in patients with atrial fibrillation receiving edoxaban or VKAs after TAVI and were evaluated using a WR analytical approach, as data on these PROs were previously limited
- The WR calculated the odds of edoxaban being favoured over VKAs for PROs reported using the PACT-Q2
- **Patients with atrial fibrillation receiving edoxaban vs VKAs after TAVI were significantly more likely to experience a meaningfully favourable outcome at month 12 in almost all PACT-Q2 items**
- The findings from this WR analysis identified drivers of PRO treatment differences between edoxaban and VKAs in this patient population

PACT-Q2, Perception Anticoagulant Treatment Questionnaire 2; PRO, patient-reported outcome; TAVI, transcatheter aortic valve implantation; VKA, vitamin K antagonist; WR, win ratio.

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