Pacemaker implantations and new left bundle branch block

- a SCOPE 2 sub-analysis -

Potential conflicts of interest

Speaker's name : Costanza Pellegrini

☑ I do not have any potential conflict of interest to declare

Speaker's name : Michael Joner

☑ Dr. Joner reports personal fees from Abbott, Astra Zeneca, Biotronik, Boston Scientific, Edwards, Orbus Neich, ReCor, Shockwave and grants from Boston Scientific, Cardiac Dimensions, Edwards, Infraredx

Why this study?

- incidences of left bundle branch block (LBBB) and permanent pacemaker implantation (PPI) vary considerably across different valve types

Boston Scientific - ACURATE neo

LBBB: 10.3 - 13%
PPI: 3.8 – 21%

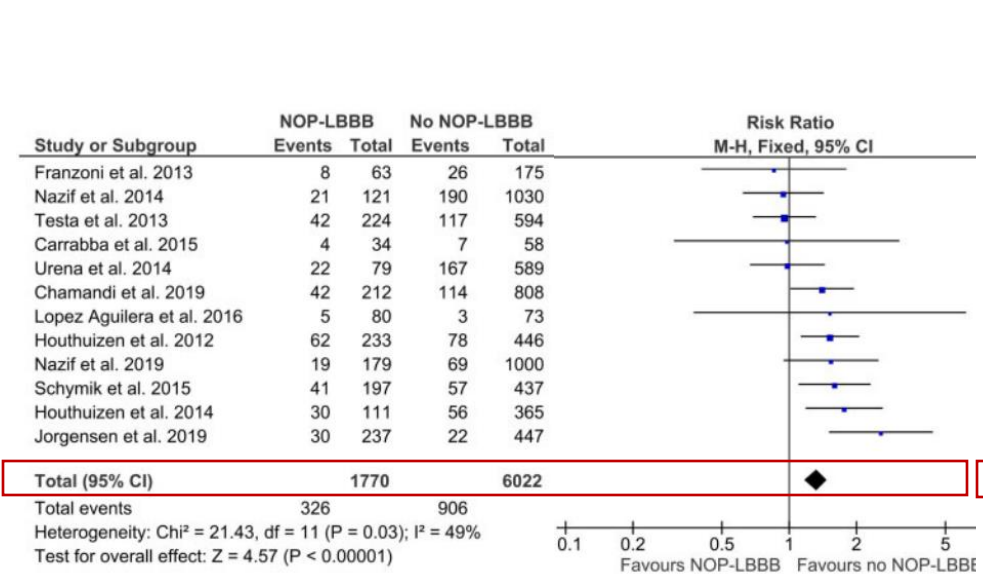
Medtronic - Evolut R

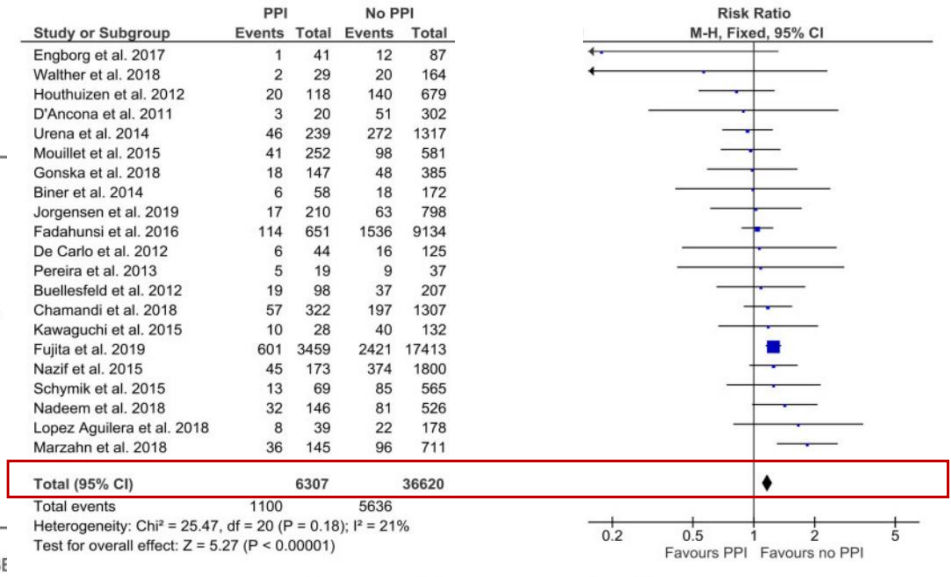
LBBB: 12.8 -25-9%
PPI: 11.8 – 25%

Edwards - SAPIEN 3

LBBB: 7.5 - 20.5%
PPI: 4.5 – 31%

- increased 1 year mortality for LBBB and PPI





Faroux et al. 2020 Eur Heart J, Auffret et al. 2017 Circulation

What did we study?

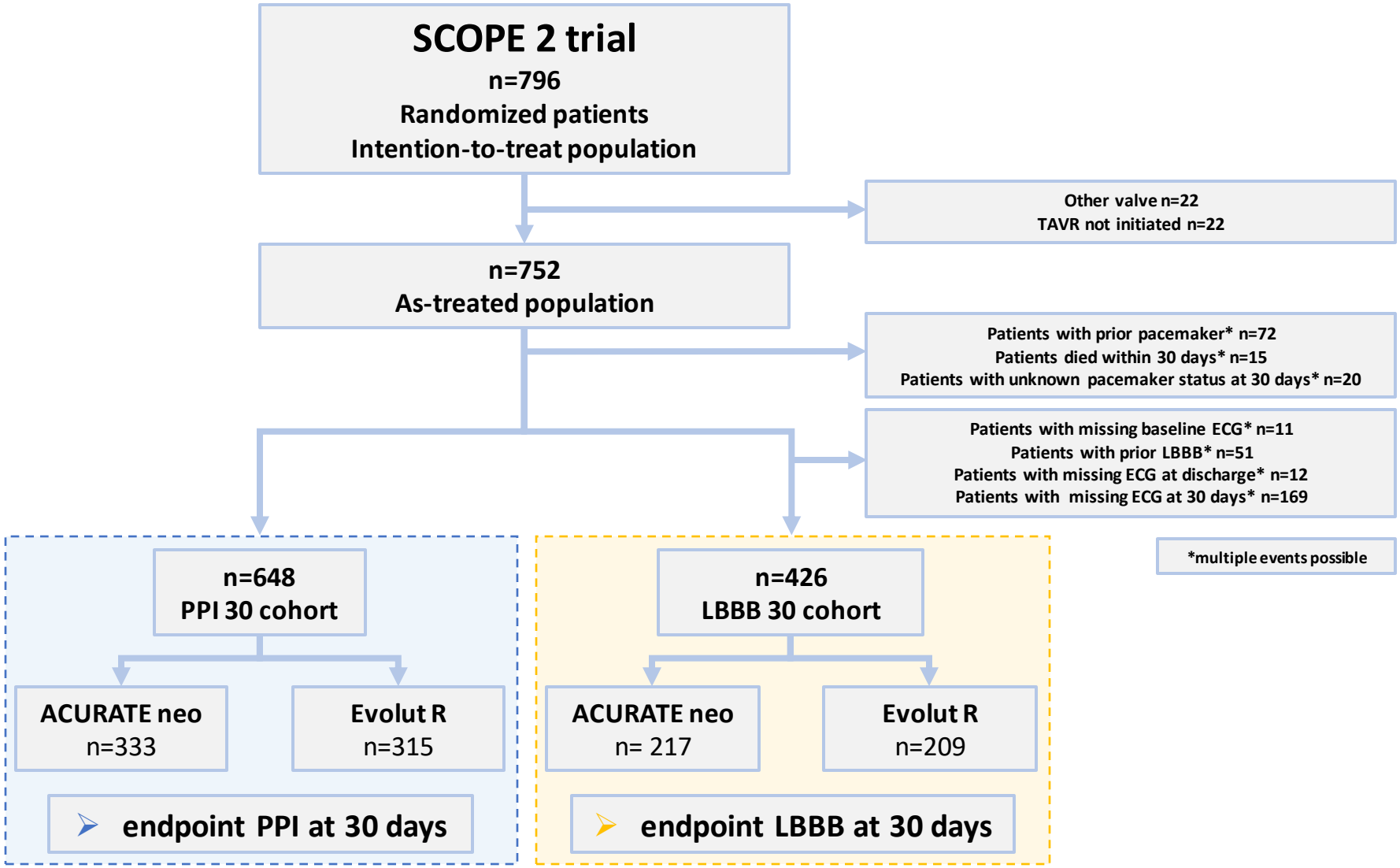
From the **powered, prospective, randomized SCOPE 2 clinical trial**, comparing the ACURATE neo and the CoreValve Evolut R valves, we performed a sub-analysis to …

- assess **independent predictors of new PPI** after TAVI, focusing on clinical baseline characteristics, CT-assessed valve morphology and pre-existing electrocardiographic variables

- assess whether newly developed **conduction abnormalities resolve or persist** from discharge to follow-up at 30 days and at 1 year

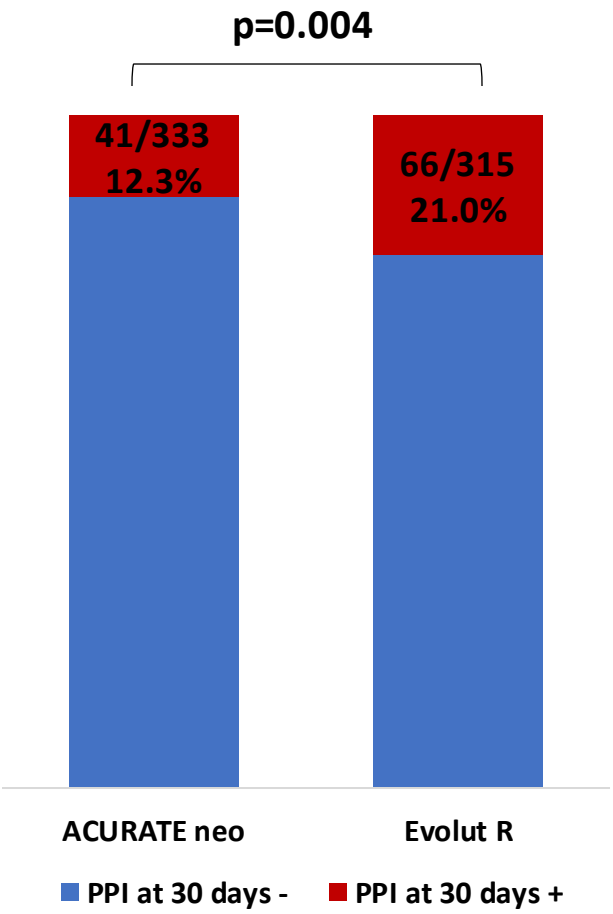
- confirm from randomized controlled data whether **new LBBB or PPI** after TAVI have an **impact on mortality at 1 year**

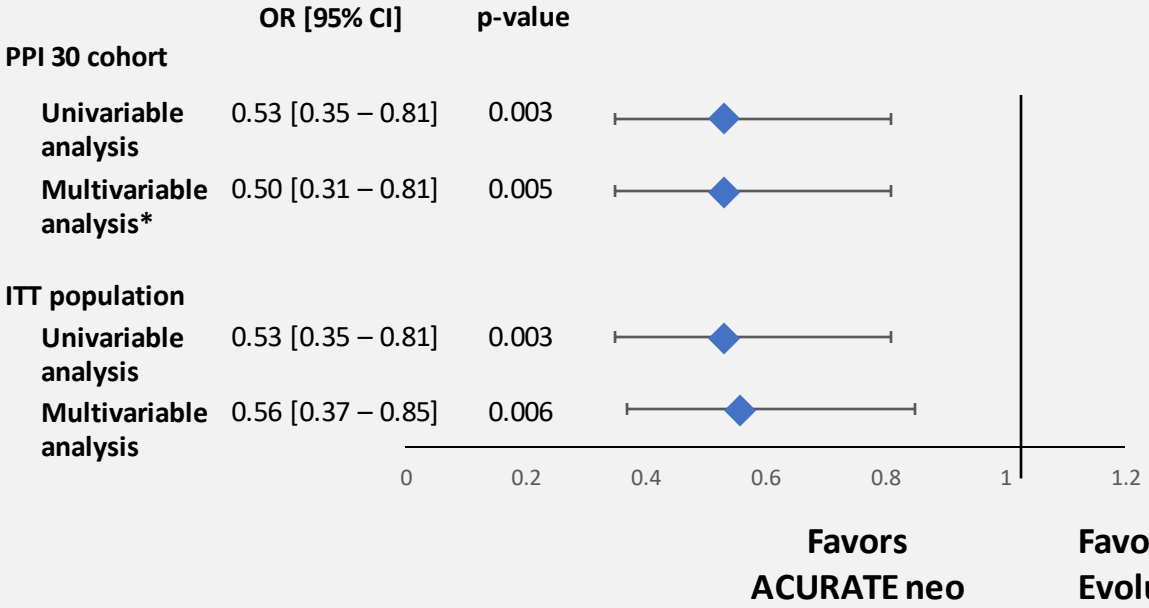
How was the study executed?



What are the essential results? (1)

- **crude event rates of PPI at 30 days for valve type and multivariable analysis for risk of PPI at 30 days**



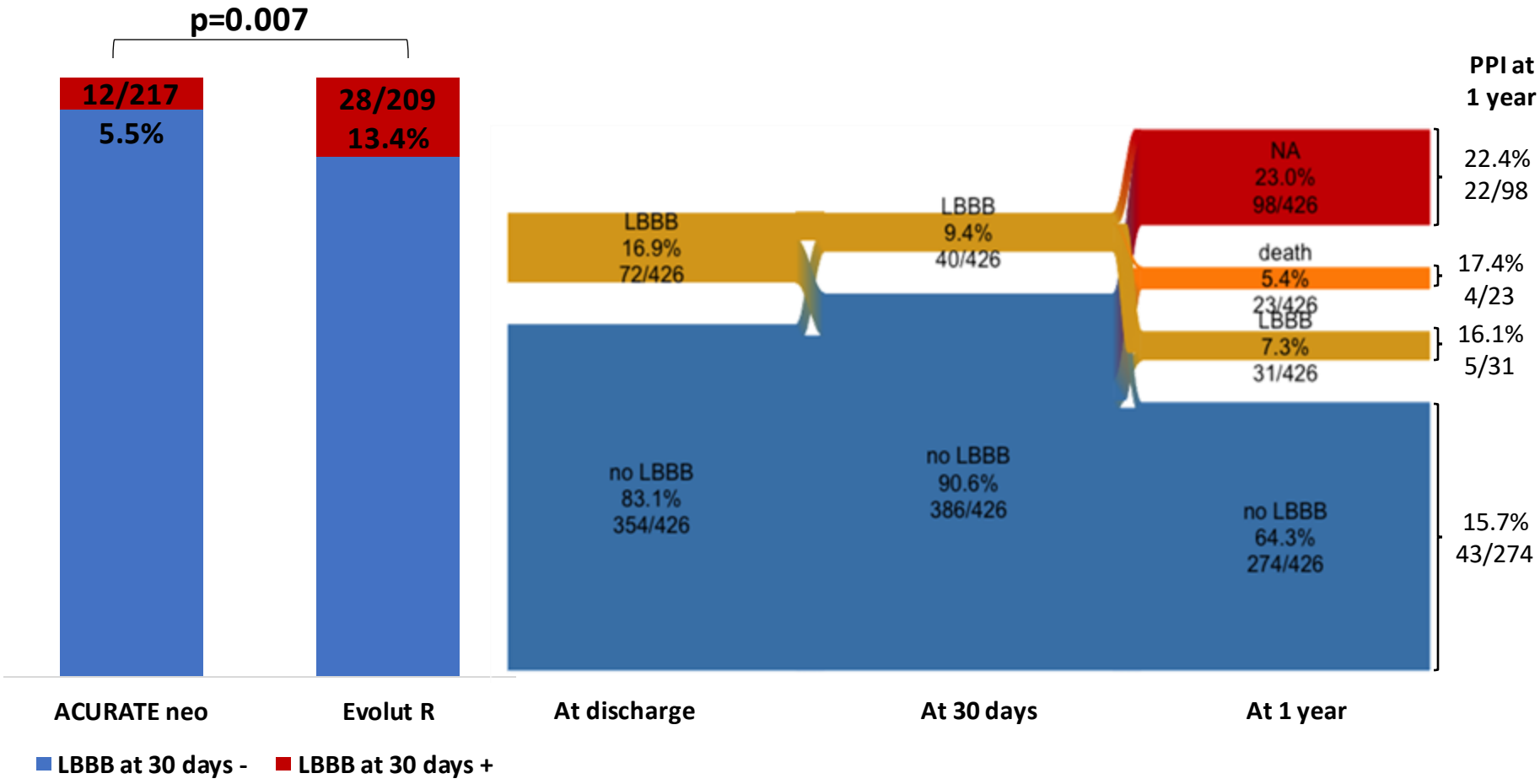


*adjusted for use of ACURATE neo, Right bundle branch block, Left bundle branch block, moderate to severe aortic calcification, moderate to severe LVOT calcification, Pre-dilatation

Right bundle branch block	**OR 6.11**	**95% C I[3.19 - 11.73]**	**<0.001**

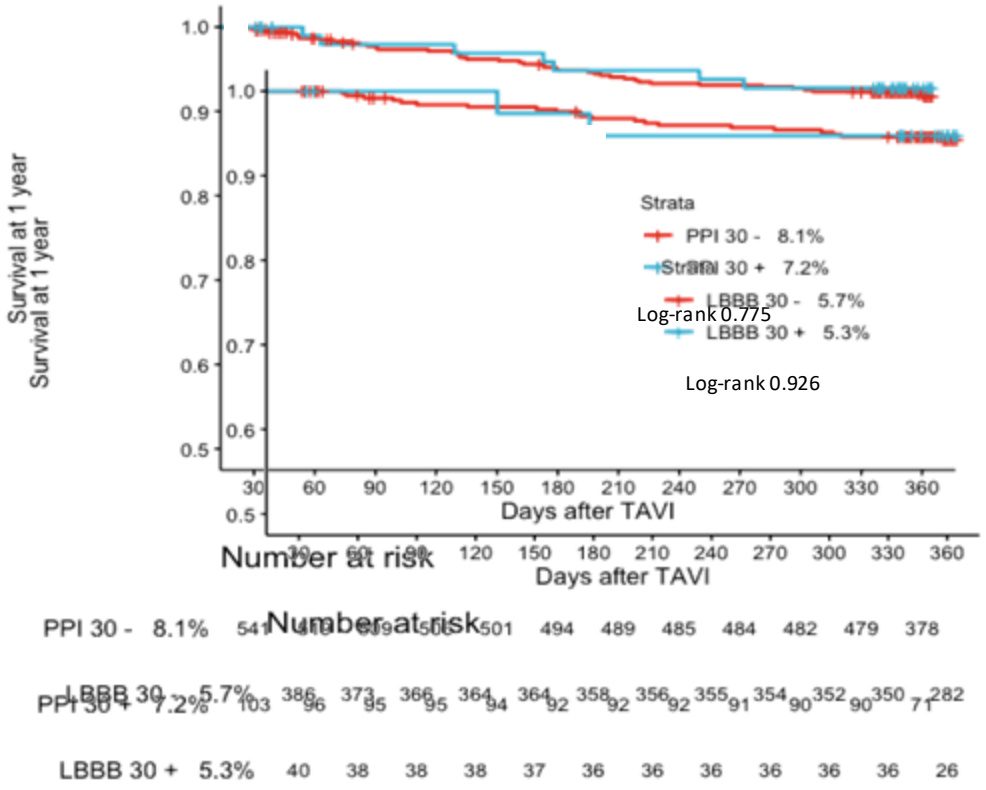
What are the essential results? (2)

- **crude event rates of LBBB at 30 days for valve type and evolution of LBBB over time**

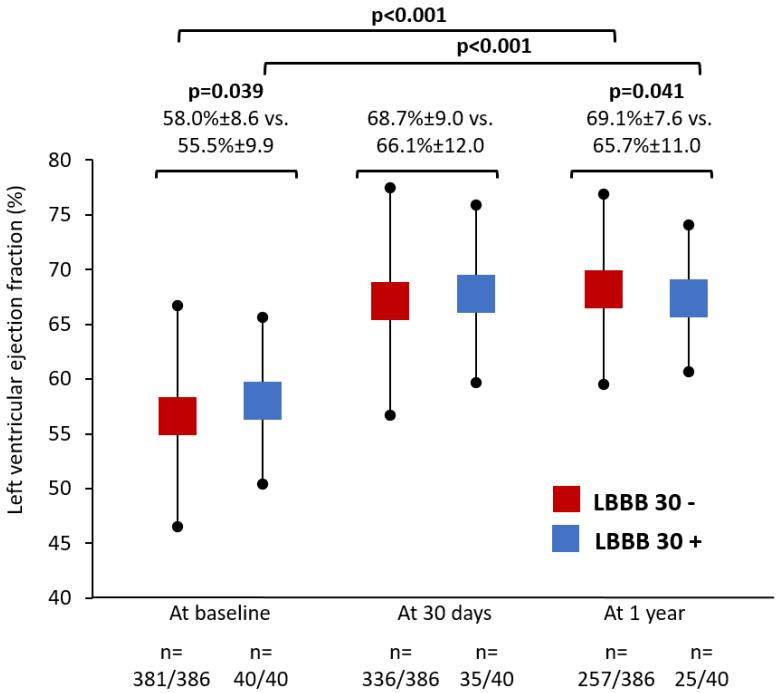


What are the essential results? (3)

- **no impact on 1 year mortality for PPI or LBBB at 30 days**



- **worse LV function at 1 year for patients with LBBB at 30 days**



Why is this important?

- Lack of data on comparison of latest generation heart valves regarding new LBBB and PPI from randomized clinical trials

- by extending TAVI to lower risk and younger patients, it is paramount to reduce post-procedural LBBB and PPI, especially in light of the expected longer survival

- although contemporary metanalysis showed association with increased mortality, the current sub-study could not confirm this finding at 1 year

The essentials to remember

- **why?** Randomized comparative evidence on LBBB and PPI with latest generation valves remain scarce
- **what?** Powered comparison on incidence, predictors and impact of LBBB and PPI at 30 days
- **how?** Sub-analysis from the randomized SCOPE 2 clinical trial
- **what are the results?** LBBB and PPI rates were lower in ACURATE neo compared to Evolut R. Use of the ACURATE neo was associated with decreased risk of PPI.
- **why is this important?** Patient-tailored valve selection should aim to minimize post-procedural complications and these results promote the use of the ACURATE neo in patients at high risk for conduction abnormalities

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