Background

- Symptomatic mitral regurgitation (MR) increases mortality rate of heart failure by about 50-90%, and one-third of patients with moderate to severe MR is inoperable (1,2).
- In these high-surgical-risk patients, Transcatheter Mitral Valve Repair (TMVR) is increasingly used.
- Bleeding or thromboembolic complications after valvular interventions are independently associated with poor outcomes. (3) Thus, defining an optimal antithrombotic therapy after TMVR is crucial.
- However, there is yet no evidence-based guideline on this topic.

Study Objective

To compare the rate of bleeding incidences in patients treated with Direct Oral Anticoagulants (DOAC) vs Dual Antiplatelet Therapy (DAPT) after TMVR with MitraClip.

Methods

- Review was done according to Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) guideline (fig 1).
- We searched PubMed, Embase, CENTRAL, and Web of Science from inception to December 2021 for studies on antithrombotic therapy after MitraClip.
- Pre-specified inclusion criteria are (a) TMVR device: MitraClip (b) Study designs: retrospective/prospective observational, and controlled trials in humans (c) Intervention: DOAC or DAPT (d) Primary endpoint: incidence of Mitral Valve Academic Research Consortium (MVARC) bleeding events (e) Endpoint duration: within 30 days
- Random-effects model meta-analysis was performed on extracted data. Analysis was done via Cochrane RevMan 5.4 software. (4)
- Higgins’s I-squared test was used to measure the proportions of total variability due to between-study variability. (5)

Results

- Out of 817 studies, 3 studies, including 645 patients in the group of interest, were included in the meta-analysis.
- Mean age of the patients was 76.8 ± 8.7 years, and 61.3% were males.
- Pooled analysis (fig. 2) revealed that bleeding events were significantly lower in the DOAC group (RR: 0.61, 95% CI: 0.38 - 0.98, p = 0.04, I²: 0%). (fig. 2)

Discussion

- Incidences of MVARC bleeding within 30 days of starting antithrombotic therapy is lower in patients treated with DOAC compared to those treated with DAPT.
- In patients that needs antithrombotic therapy after MitraClip and have increased risk of bleeding, DOAC may be a suitable option than DAPT.

Limitation and recommendation

- The sample size of this study is limited and we did not evaluate differences in the mortality outcome.
- Further studies is needed to evaluate either anticoagulation strategy’s impact on short and long-term mortality.

Main Finding

This hypothesis-generating study showed that; compared to DAPT, patients treated with DOAC had a reduced risk of bleeding events within 30 days after TMVR with MitraClip.

References

4. Review Manager (RevMan) [Computer program]. Version 5.4. The Cochrane Collaboration, 2020