

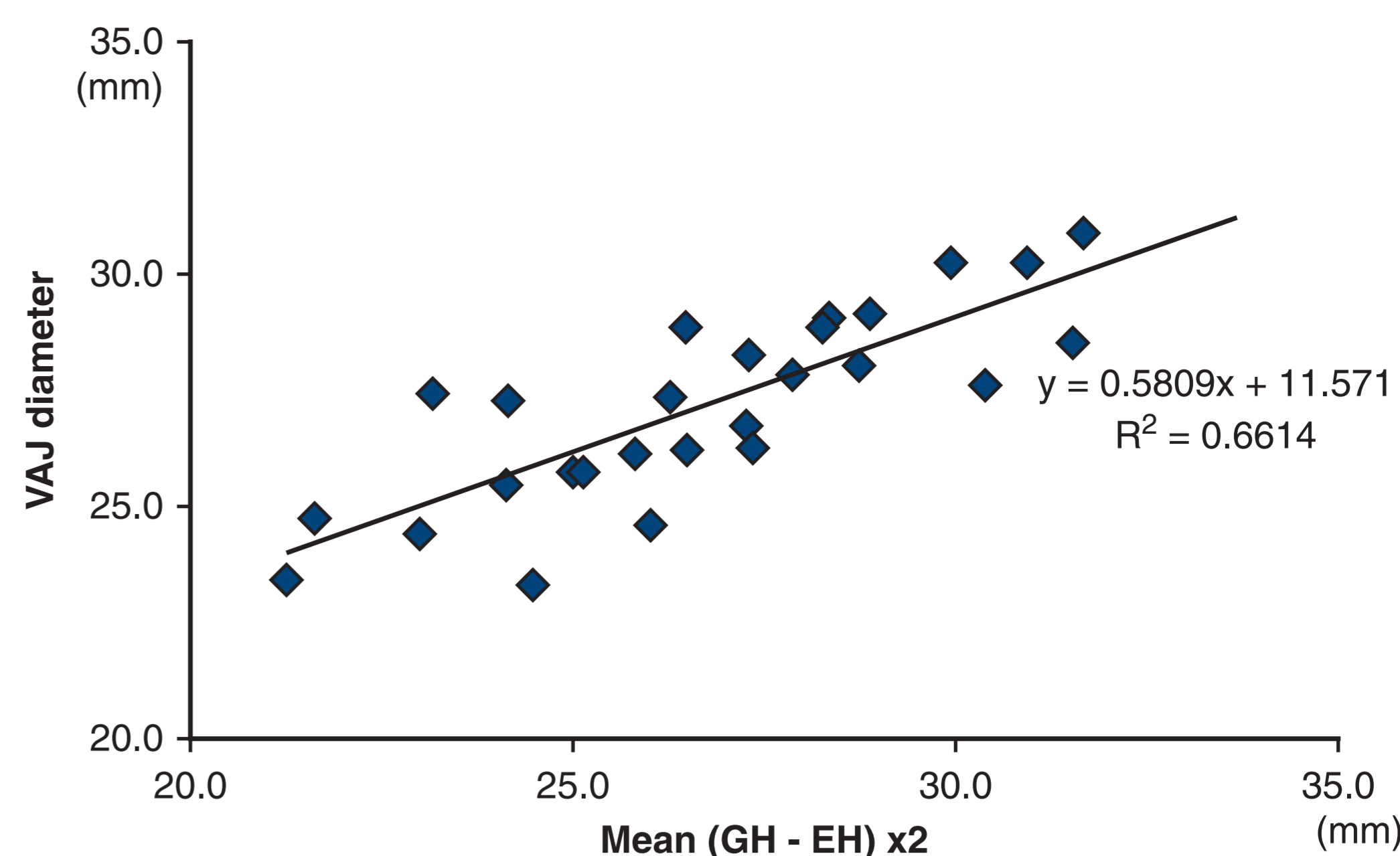
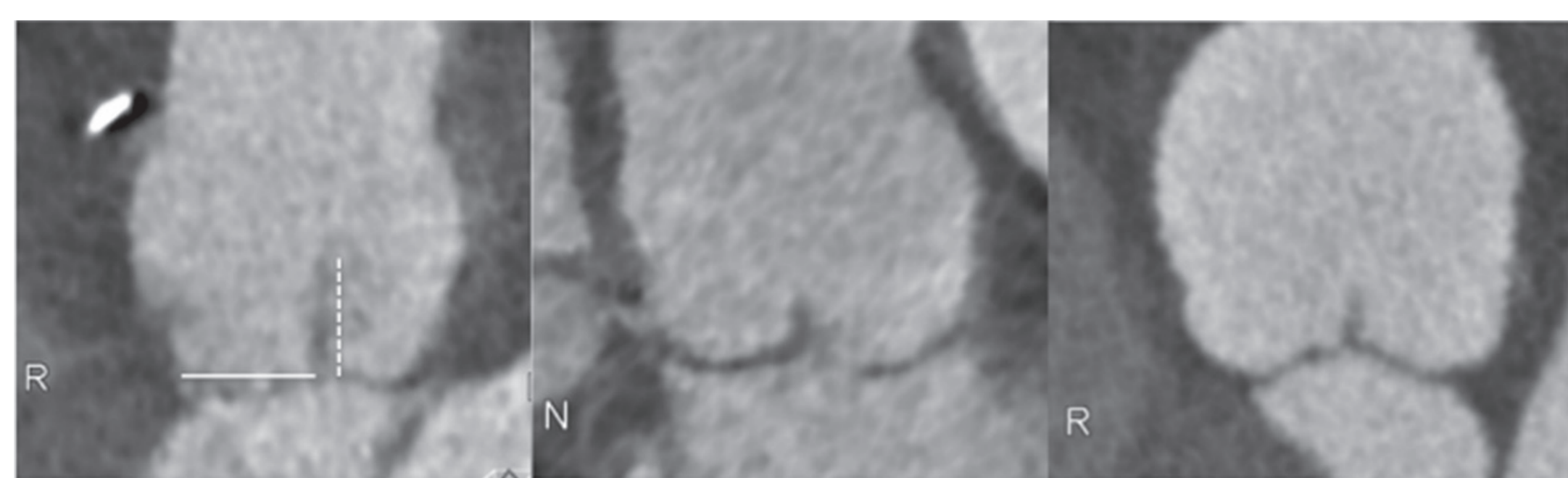
Background

A simplified approach to determine the ventriculoaortic junction diameter in the reimplantation procedures Check for updates

Hiroshi Tanaka, MD, Yoshikatsu Nomura, MD, Hirohisa Murakami, MD, and Shunsuke Miyahara, MD, Hyogo, Japan

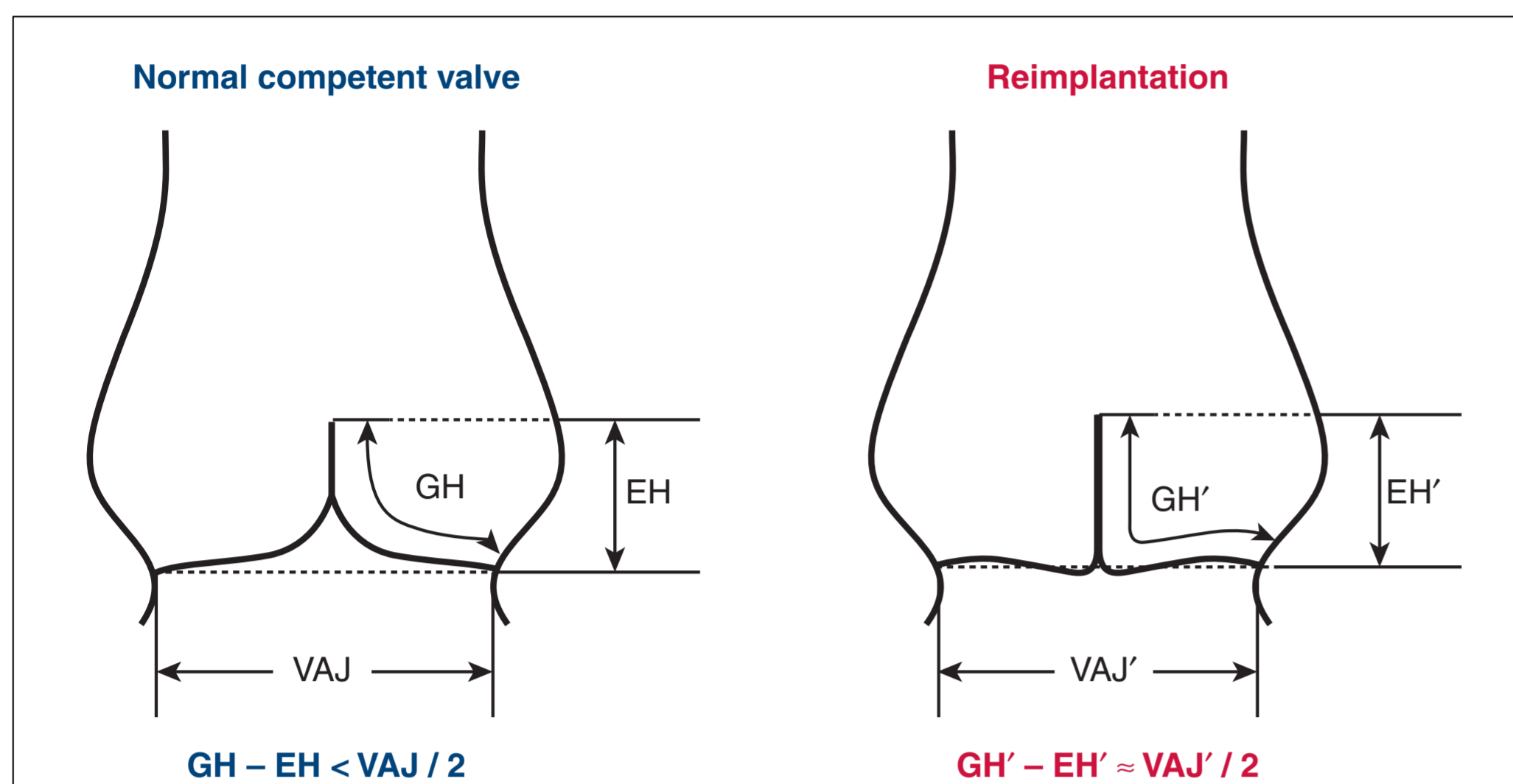
JTCVS Techniques 2022;12:27-31

Cardiac CT analysis



Correlation between (GH-EH) and VAJ diameter.

Hypothesis



GH: Geometric height, EH: Effective height, VAJ: ventriculoaortic junction

Using the equation:

| GH (mm) | EH (mm) | VAJ (mm) |
|---------|---------|----------|
| 18 | 8 | 16.8 |
| 20 | 9 | 18.0 |
| 22 | 10 | 19.1 |
| 24 | 11 | 20.3 |

$EH \approx 45\% GH$

A simplified formula: target VAJ = (minimum GH - target EH) x2 (Target EH: 10 - 11mm)

Objectives

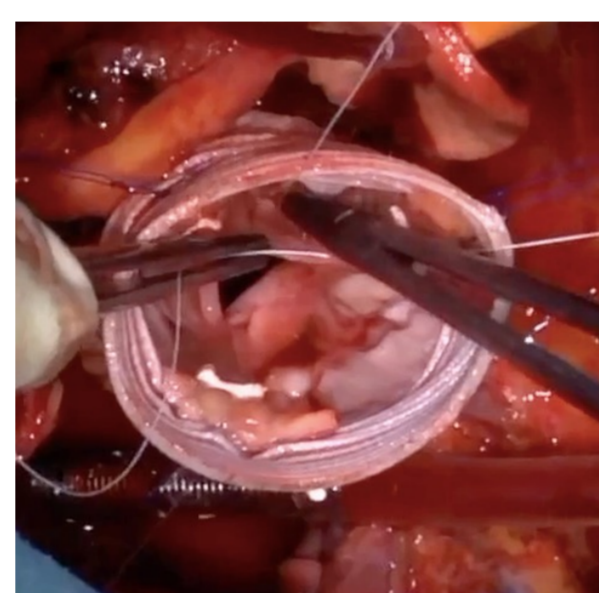
To investigate the efficacy of the formula in the patients with aortic regurgitation.

Methods

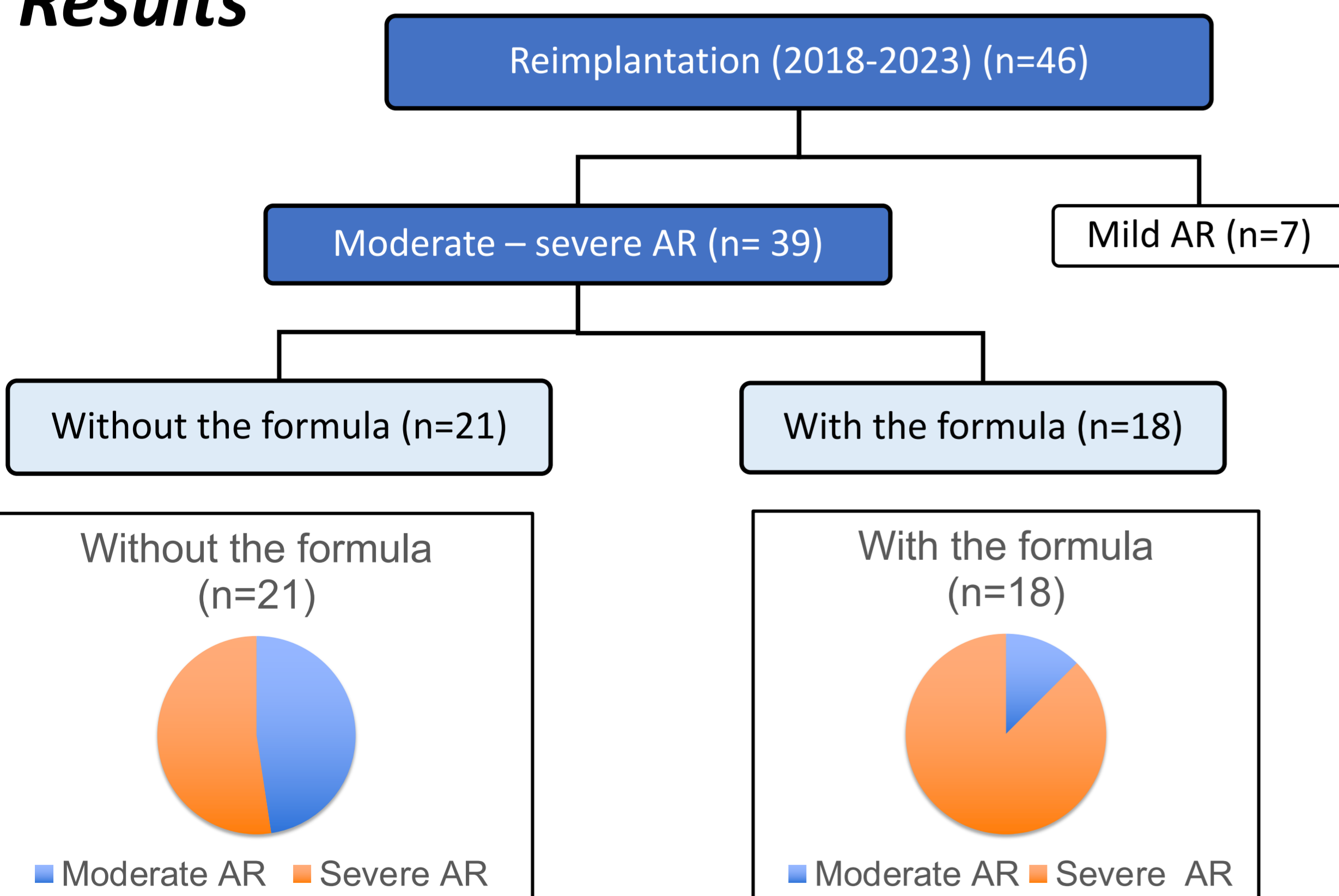
- 2019-2022 Reimplantation, Tricuspid valve
- Retrospective study
- To compare Pts with the equation to Pts without the equation
- Subgroup analysis -- type II, III aortic regurgitation
- Outcomes : recurrent AR greater than moderate

Operative techniques

- **Without the formula**
 - Standard Reimplantation technique
 - Graft size: 28 - 30 mm
 - To raise the EH to 9mm using central plication
- **With the formula**
 - Deep dissection around the RCS
 - Graft size: Non-left commissure height
 - To raise the EH > 10mm in type II AR
 - Frequently used Free margin resuspension

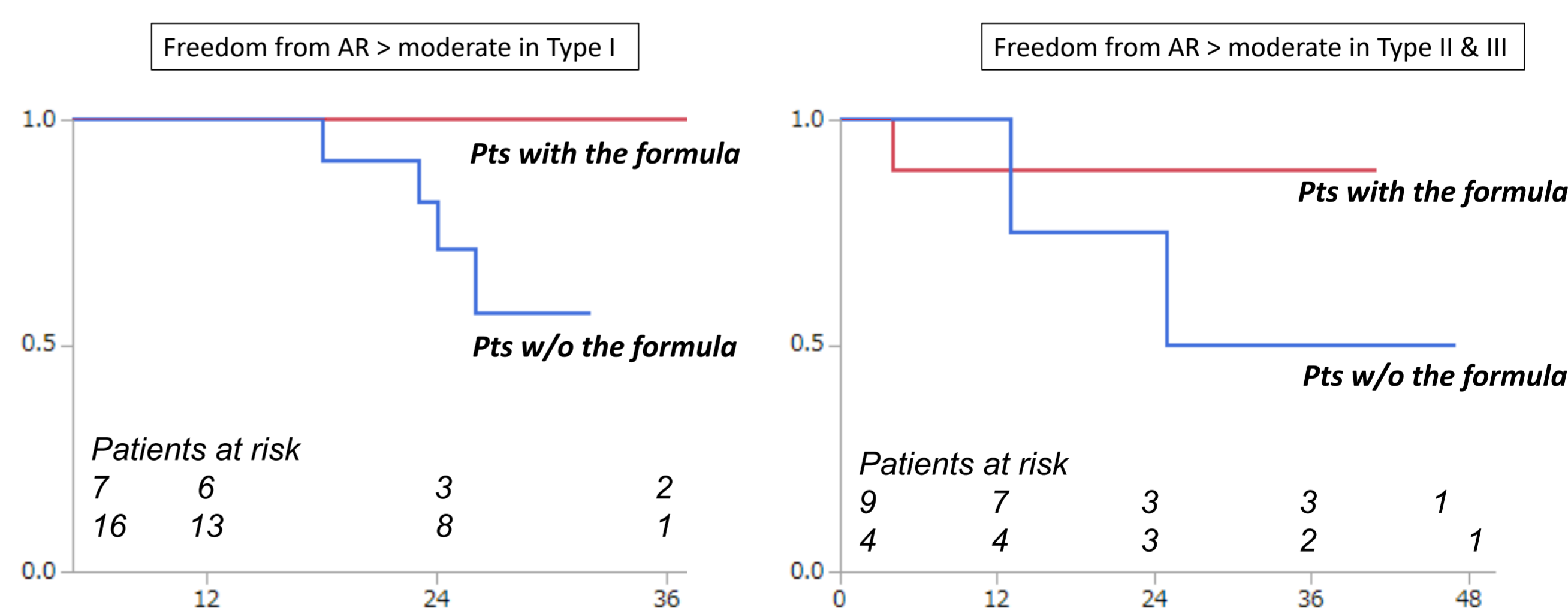
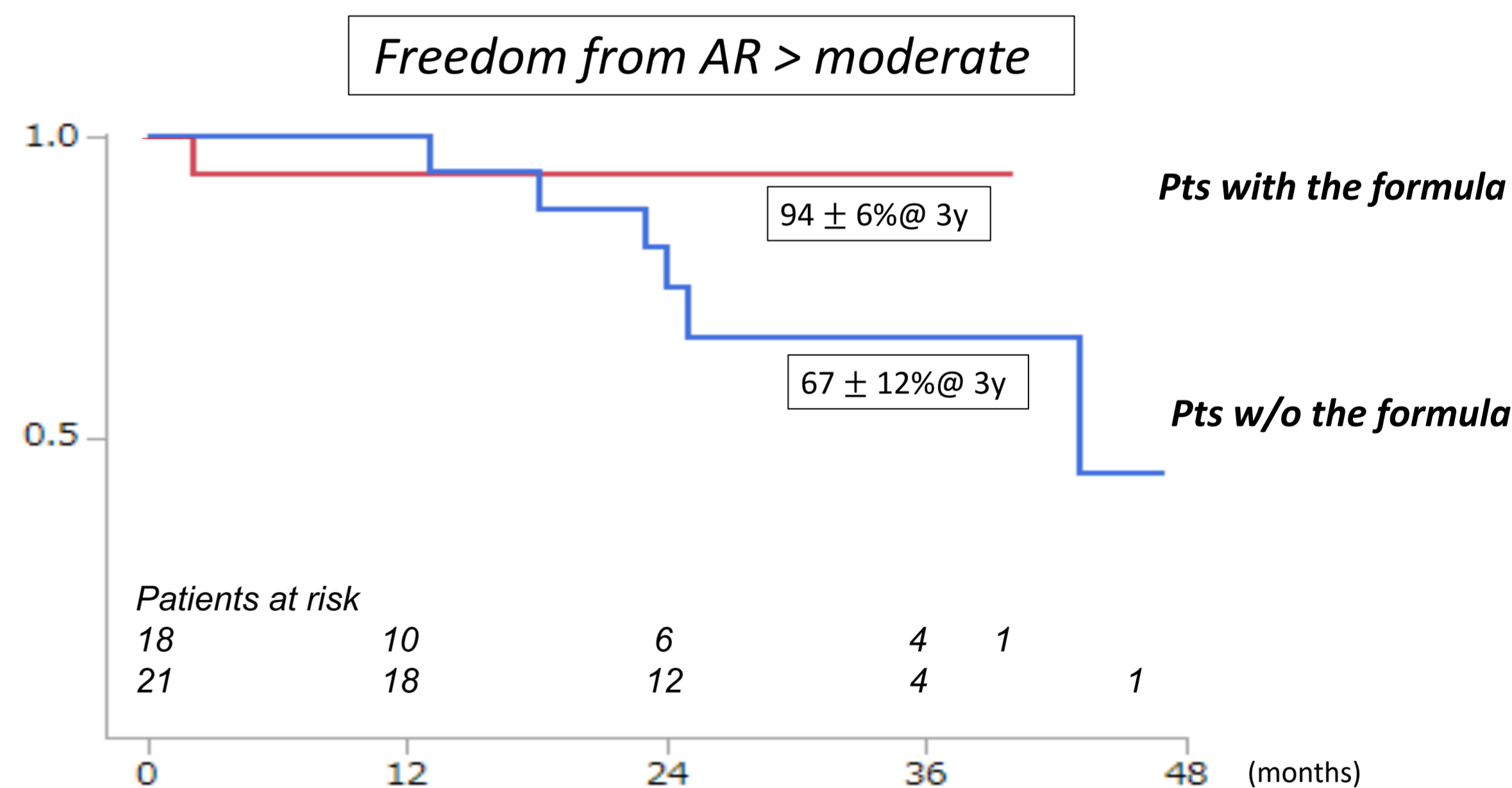


Results



| | Without the formula (n=21) | With the formula (n=18) |
|--------------------------|----------------------------|-------------------------|
| Age (year) | 61 (37 - 77) | 64 (43 - 75) |
| Gender (male) | 19 (90%) | 16 (88%) |
| Aortic pathology | | |
| degenerative | 18 | 13 |
| acute dissection | 0 | 4 |
| chronic dissection | 3 | 1 |
| AR classification | | |
| type I | 16 | 7 |
| type II | 4 | 9 |
| type III | 1 | 2 |
| Follow-up period (month) | 24 (5 - 47) | 15 (2 - 40) |

| | Without the formula (n=21) | With the formula (n=18) |
|-----------------------------|----------------------------|-------------------------|
| Graft size | | |
| 24mm | 0 | 1 |
| 26mm | 2 | 9 |
| 28mm | 15 | 8 |
| 30mm | 4 | 0 |
| Cusp repair technique | | |
| Central plication | 10 | 7 |
| Free margin resuspension | 0 | 6 |
| Subcommissural annuloplasty | 0 | 1 |



Conclusions

The controlled approach of VAJ reduction in reimplantation would produce appropriate effective height and bring better long-term valve durability in patients with aortic regurgitation.

