

Background and aim

Aortic root surgery still represents a complex challenge for cardiac surgeons. Over the years, several techniques have been developed, leading to the refinement of aortic valve-sparing procedures, among which the Tirone David procedure, firstly introduced in 1992, and its subsequent modifications, are the most widespread and commonly used nowadays.

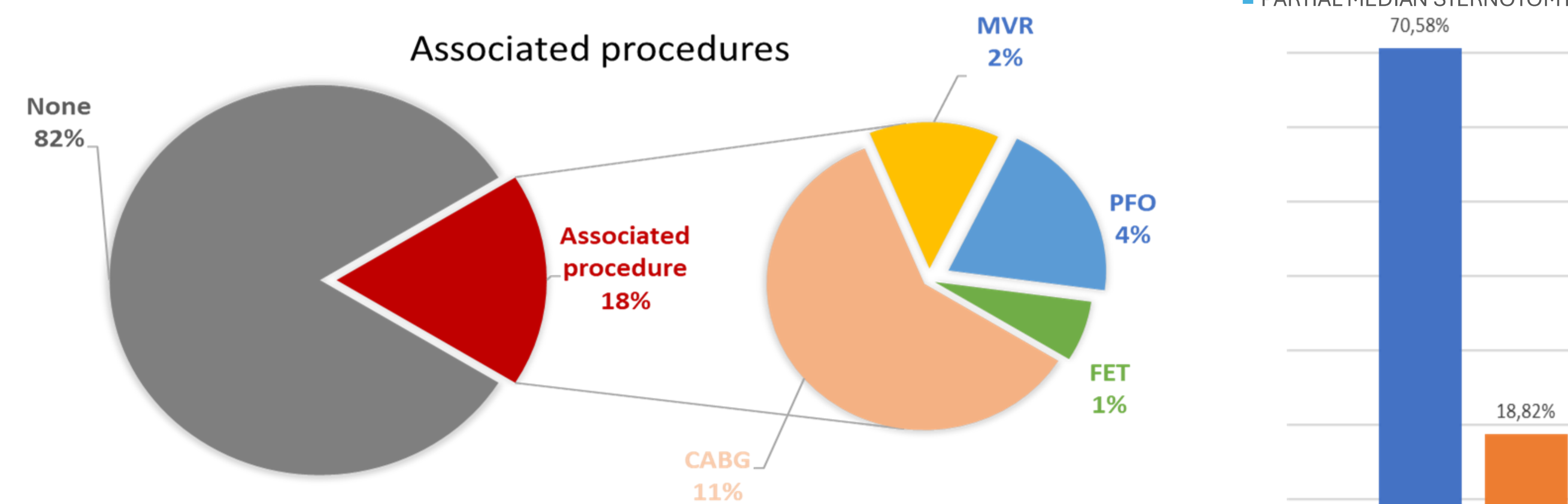
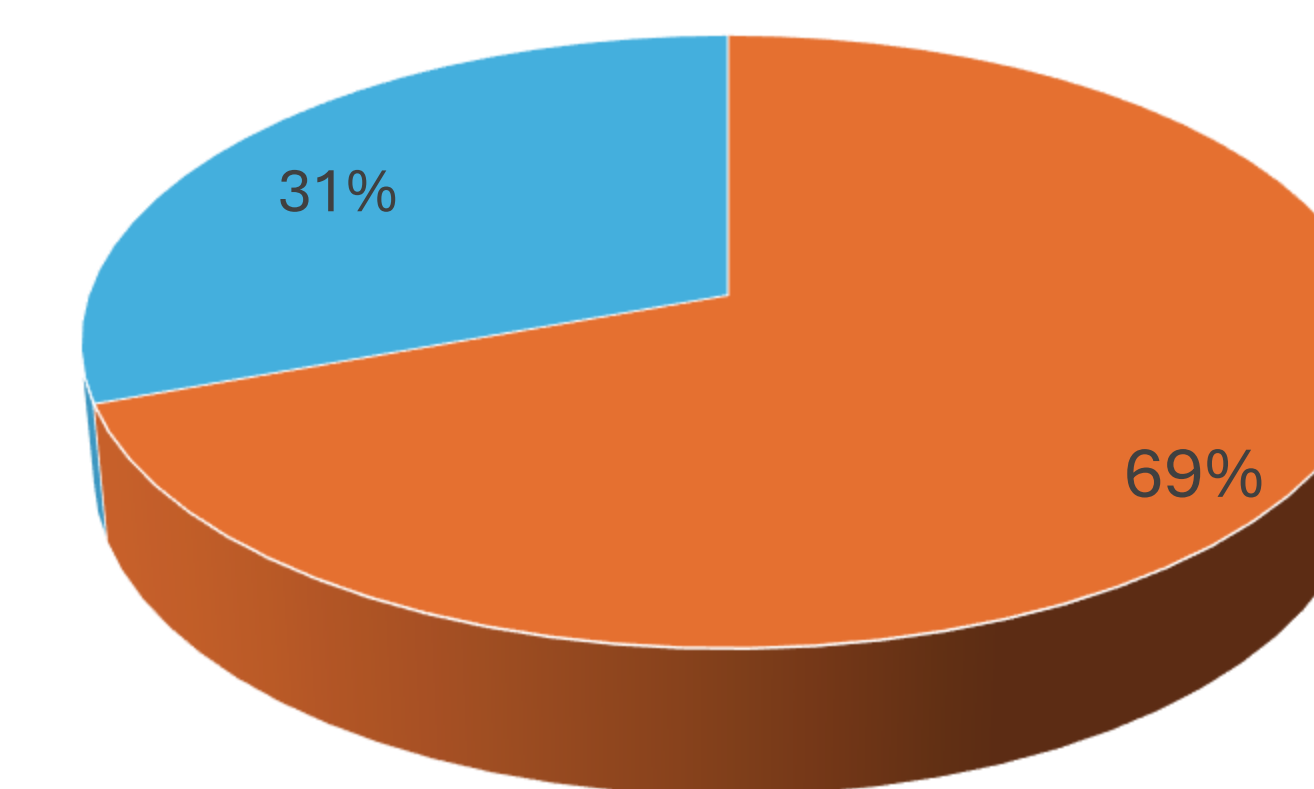
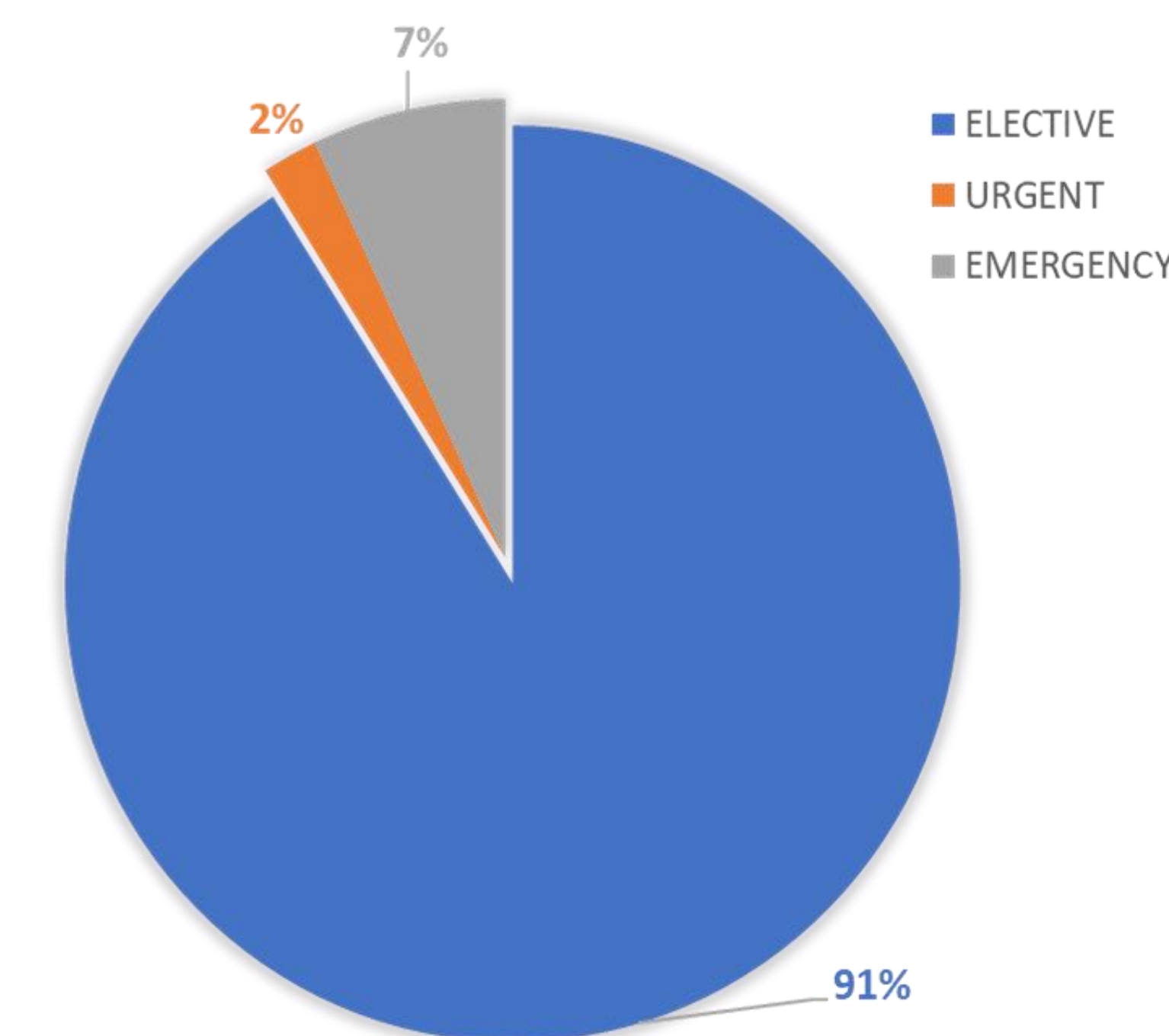
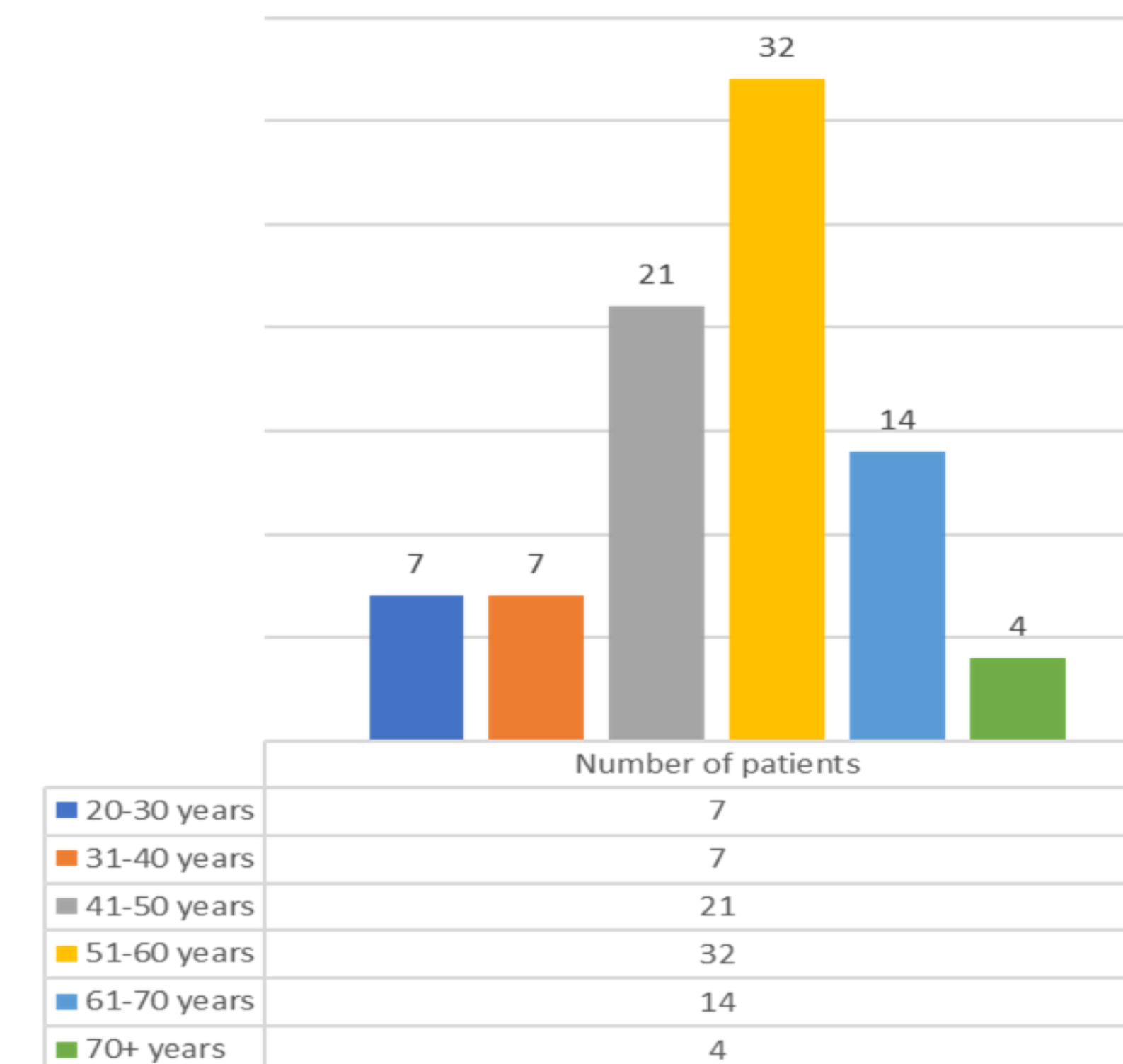
In our center, aortic valve reimplantation using a straight tube graft (David I) represents the aortic valve-sparing technique of choice, commonly used in aortic root dilatation associated with aortic valve insufficiency.

This study aims to report the data collected from 2017 in the Careggi's cardiac surgery unit regarding the effectiveness of the modified Tirone David procedure in terms of mortality, freedom from disease, and freedom from reoperation, including specific patient groups such as those with Marfan syndrome and bicuspid aortic valve patients

This study represents a first step for a deeper evaluation of possible preoperative characteristics of early failure based on CT scan analysis.

Main pre-operative and Intraoperative characteristics

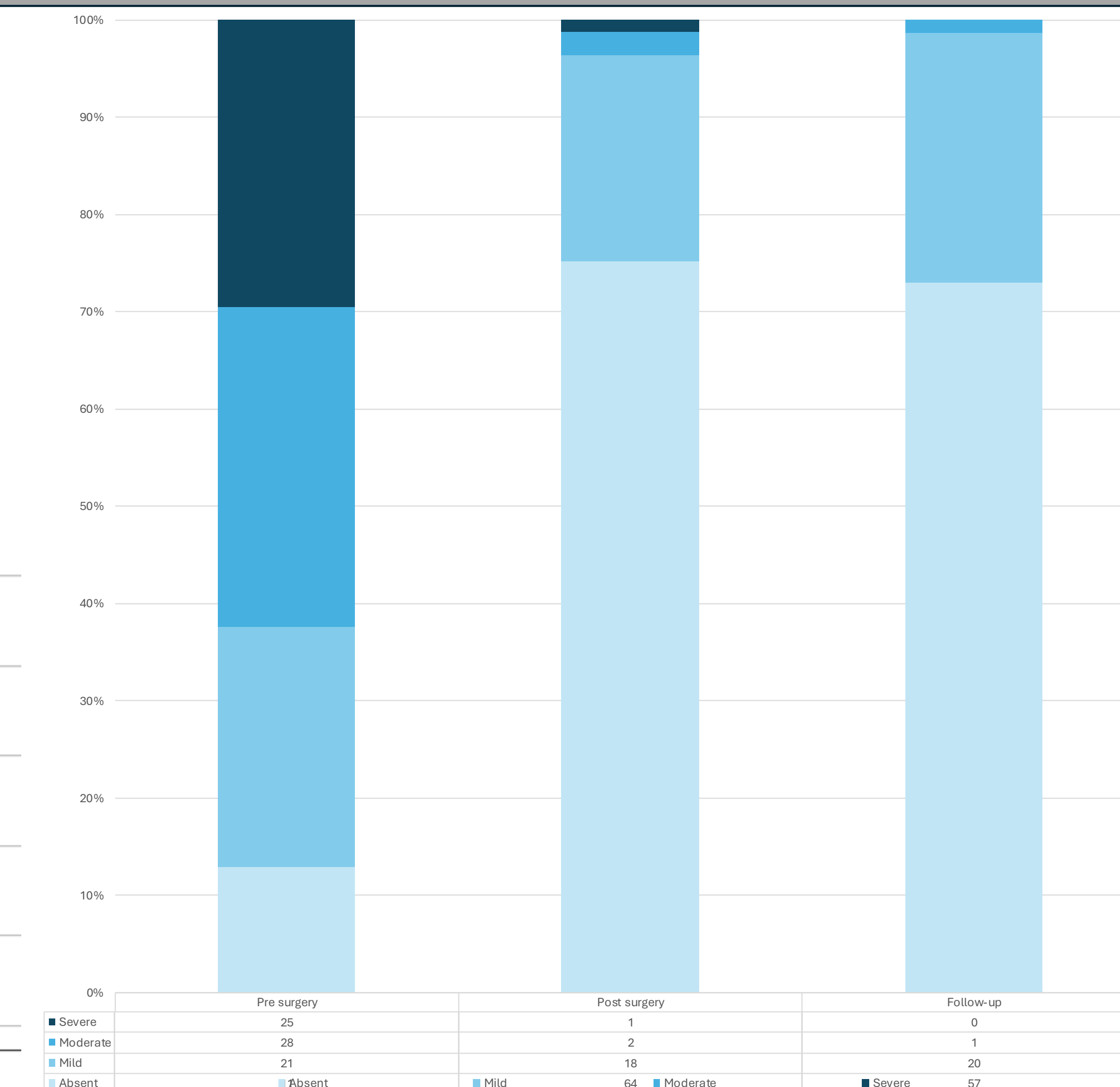
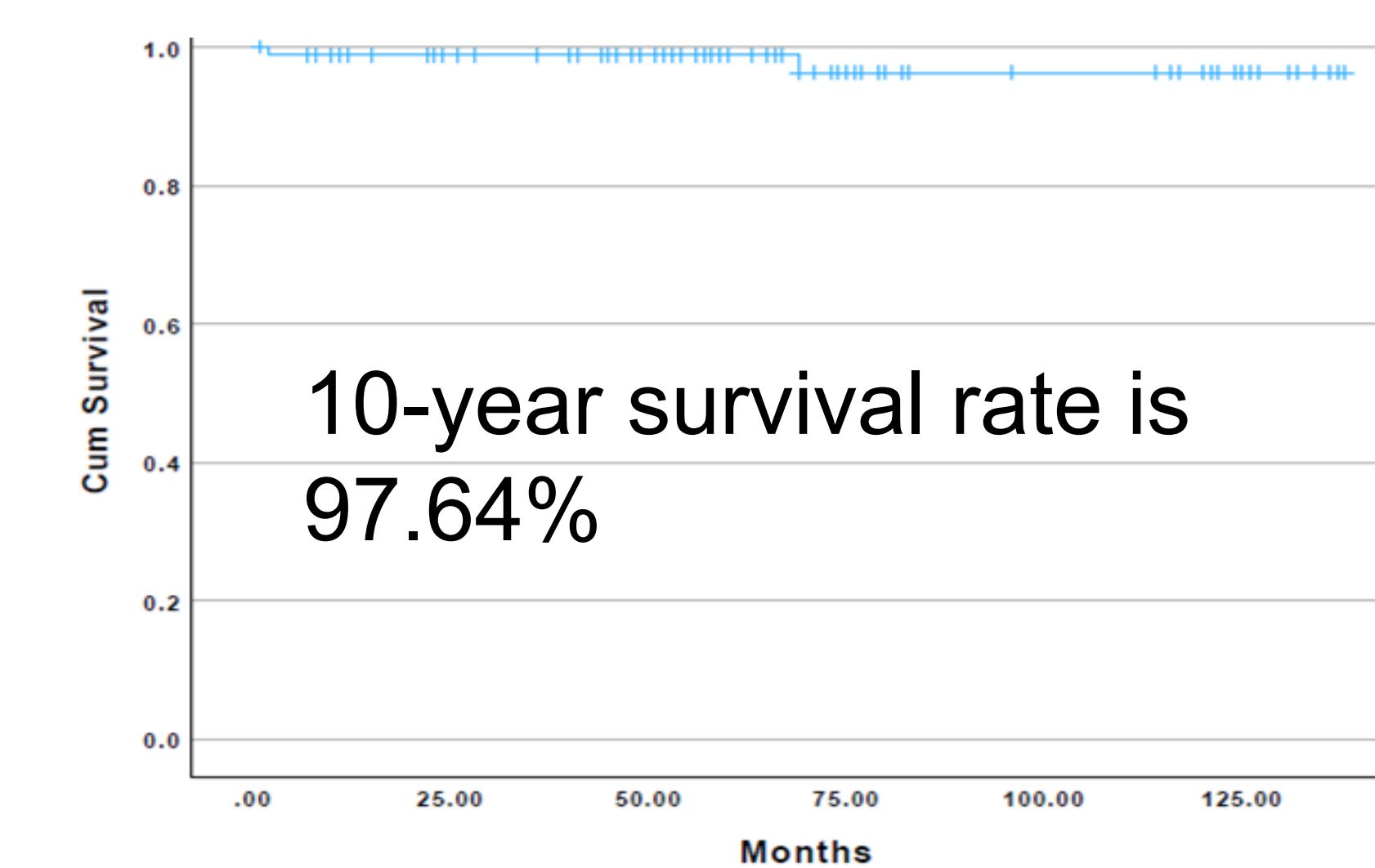
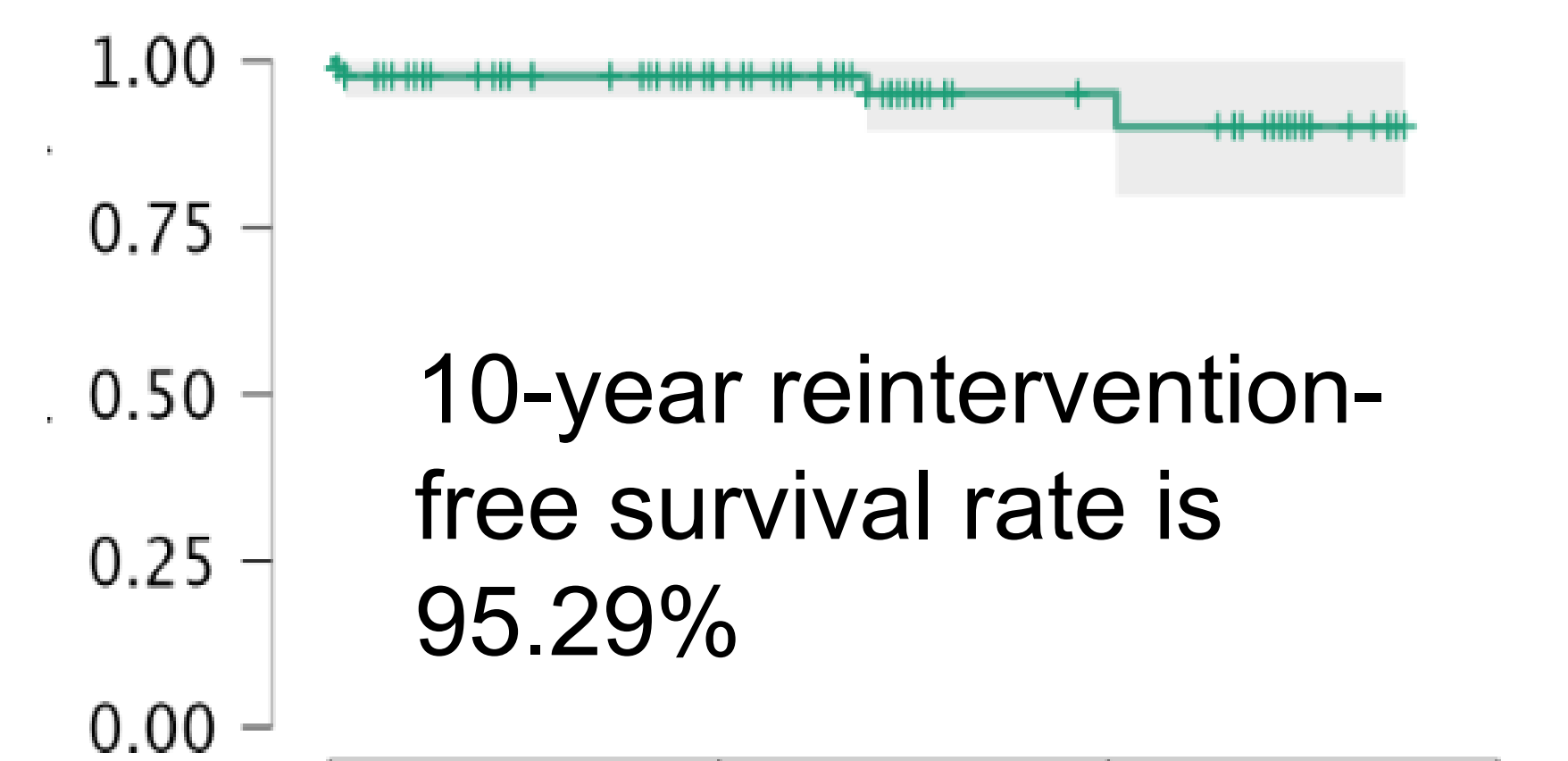
M=92,95% (n=79) F = 7,05% (n=6)



18% of patients (n=15) underwent associated procedures:

- 11% (n=9) Coronary Artery Bypass Grafting (CABG)
- 2,35% (n=2) Mitral Valve Repair (MVR)
- 3,52 % (n=3) Closure of a patent foramen ovale (PFO)
- 1,17% (n=1) Frozen elephant trunk (FET)

Post-operative results



Our study demonstrates that the modified Tirone David technique is associated with low short-term and long-term mortality rates and a low rate of reintervention.

Our study demonstrates that aortic valve reimplantation represents a valid surgical alternative for treating acute aortic diseases, such as aortic dissection.

During the follow-up, patients who underwent this type of surgery exhibited a high freedom from moderate or severe aortic insufficiency (AI). These results were also observed in particular patient categories (such as those with Marfan syndrome and BAV).

In our study there were no significant differences in short and long-term results between median sternotomy or MICS (31% vs 69% of cases).

In conclusion, the Tirone David technique should be considered the primary surgical choice for patients with aortic root pathology and anatomically normal valve cusps, even in the presence of congenital diseases or in emergency settings in experienced centers

30-Day mortality is 0%

