

INTRODUCTION

- The superiority of bilateral internal mammary artery (BIMA) over single internal mammary artery (SIMA) in CABG procedure is unquestionable. The complexity of the procedure and fear of complications have resulted in less than 10% BIMA use in the USA.
- We compared the perioperative outcome events of our BIMA and SIMA cases in a matched population.

METHODS

- Patients were obtained from November 2020 till July 2022, when we shifted our practice to the in-situ BIMA procedure for a vast majority of our cases using off-pump technique.
- 345 patients were reviewed [61% BIMA and 98% off-pump; for perspective, in the three years prior to the study our numbers were 459 (9% BIMA and 40% off-pump)].
- We performed a retrospective analysis between the two study groups after matching the baseline characteristics (age, BMI, MI, EF, diabetes, dialysis, etc.) using a propensity score matching (PSM), which yielded 113 matched patients between the groups.

RESULTS & DISCUSSION

- After PSM matching, 30-day all-cause mortality was similar (BIMA vs. SIMA: 0% vs. 1.77%, P = .497).

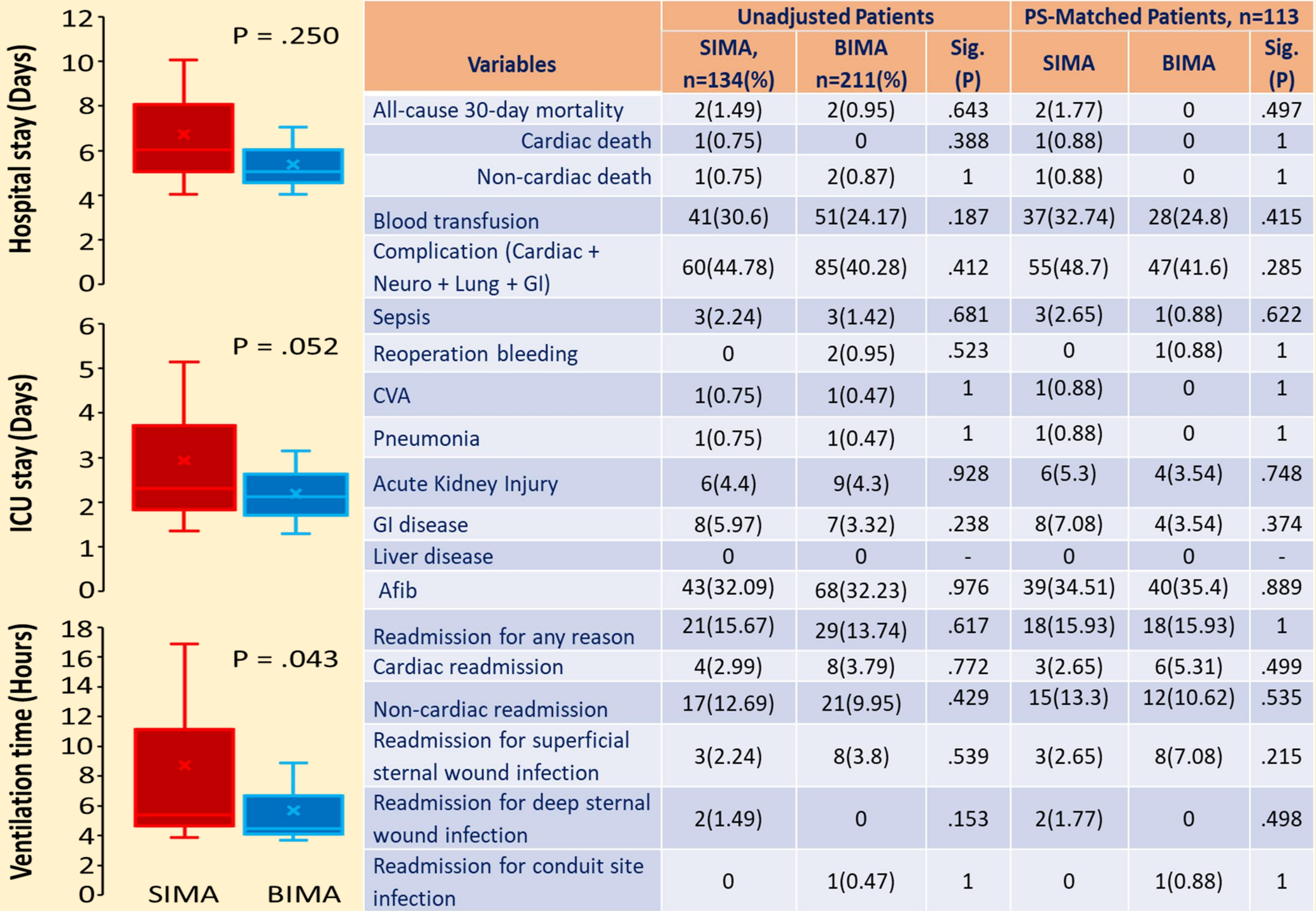


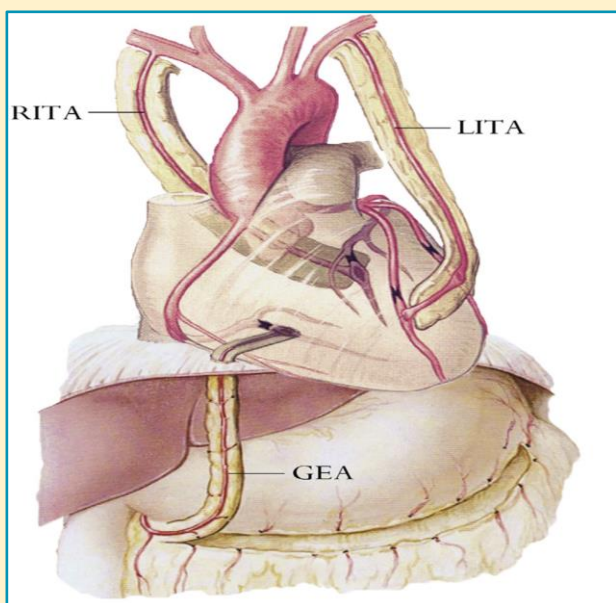
Figure: Left: Figure depicts the box-whisker plots of hospital stay, ICU stay, and ventilation time between the two study groups after PSM. Horizontal lines are median values and ‘X’ symbols are means. Right: Table represents the post-operative outcome events between the BIMA and SIMA groups before and after PS matching.

- Post-operative complication rates (cardiac, neurological, pulmonary, and gastro-intestinal) were similar (BIMA vs. SIMA: 41.6% vs. 48.7%, P = .285).
- Median ventilation time was significantly shorter in the BIMA group (4.4 vs. 5.3 hours, P =.043), though operative times were similar between the BIMA and SIMA groups (5.6±1.13 vs. 5.8±1.14, P=.804).

- Rates of readmission for any reasons were similar (BIMA vs. SIMA: 15.9% vs. 15.9%, P = 1). Rates of readmission for deep sternal wound infection (0% vs. 1.77%, P =.498) and for superficial sternal wound infection were similar (7.08% vs. 2.65%, P = .215). Rates of readmission for conduit site (saphenous vein graft) infection were similar (BIMA vs. SIMA: 0.88% vs. 0%, P=1).
- The BIMA and SIMA cases were performed by the same group of surgeons and the number of grafts were similar between the two study cohorts (3.16+0.85 vs. 3.21+0.82, P= .589).

CONCLUSION

- Post-operative 30-day all-cause mortality, complications, readmission, sternal wound infection, blood transfusion, and stroke rates were similar between the BIMA and SIMA groups.
- Length of hospital and ICU stay were similar between the groups, with a significantly shorter ventilation time in the BIMA cohort.
- We conclude that a greater rate of BIMA use in CABG is achievable without causing any significant increment in post-operative complications.



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