

Fully Transradial Versus Transfemoral Approach for Percutaneous Intervention of Coronary Chronic Total Occlusions Applying the Hybrid Algorithm Insights From RECHARGE Registry

Supplementary material

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ADDITIONAL STATISTICAL AND SUB-GROUPS ANALYSIS

Assessment of baseline covariate balance: standardized differences

In order to assess the solidity of the PS matching, a comparison of the balance of all baseline covariates in Table 1 and 2 between arterial access groups before and after PS matching using the standardized difference (Supplemental Figure A). This directly quantifies the bias in the means (or proportions) of covariates across the groups, expressed as a percentage of the pooled standard deviation (SD).

Before matching, the median PS for fTRA in patients with TFA (n = 947) was 0.1682, IQR 0,1009 - 0,2671, and in those with fTRA (n = 306) was 0.3325, IQR 0,2101 - 0,5156 (p<0,001, Supplemental Figure B), with an associated standardized difference of 76%. After matching, the median PS for fTRA changed to 0,2300 IQR 0,1314 - 0,3183 in both groups (p=0,99), with an associated standardized difference of 0,01%.

Of note, when calculating the PS in the analysed population, multiple imputation was needed to overcome limitations deriving from missing data in the PS analysis. Out of the 34 variables included for the non-parsimonious PS building, only two had more than 50 missing values (around 4% of the 1253 patients included in our report) and were: “normal LVEF” and “Heart Failure at clinical presentation” (73 [5,8%] and 75 [5,9%] respectively). All the other variables had less than 10 missing values each (nearly 0,8%).

Inverse Proportional Treatment Weight (IPTW)

To confirm the results obtained with the PS analysis, we also conducted rigorous adjustment for differences in baseline and lesion characteristics of patients using the weighted Cox proportional-hazards regression models with the inverse probability of treatment weighting (IPTW). According to this technique, weights for patients receiving fTRA were the inverse of the propensity score and weights for patients receiving TFA were the inverse of 1 – the propensity score. After calculation of the IPTW, Generalized Estimation Equations for procedural success in the two access groups was performed (using as Scale Weight the just calculated variable), which generated an expected odd ratio for Procedural Success of 0,847 (Confidence Interval: 0,526 – 1,363) statistically non-significant (p-value=0.49). This result was consistent with those deriving from the PS-matching and PS-stratified analyses.

Supplemental Figures Legends

Supplemental Figure A: Absolute Standardized Differences values in the variable included in the propensity score building, before and after matching.

Supplemental Figure B: Distribution of Propensity Score in the two groups of analysis before matching. Femoral Access: Median 0,16827; IQR 0,10094 - 0,26710. Radial Access: Median 0,3325; IQR 0,21013 - 0,51562