Letter by Carnero-Alcázar et al Regarding Article, “Quantification of Incomplete Revascularization and Its Association With Five-Year Mortality in the Synergy Between Percutaneous Coronary Intervention With Taxus and Cardiac Surgery (SYNTAX) Trial: Validation of the Residual SYNTAX Score”

To the Editor:

We read with interest the article by Farooq et al, “Quantification of Incomplete Revascularization and Its Association With Five-Year Mortality in the Synergy Between Percutaneous Coronary Intervention With Taxus and Cardiac Surgery (SYNTAX) Trial: Validation of the Residual SYNTAX Score,” in which the authors investigated the effect on long-term outcomes of the randomized patients receiving percutaneous coronary intervention in the SYNTAX study according to the SYNTAX score (SS) of the residual coronary lesions once subjects had been revascularized (residual SS). They concluded that a residual SS >8 was associated with increasing adverse long-term clinical outcomes, including mortality. On the other hand, residual SS ≤8 was associated with long-term mortality comparable with that of patients with complete revascularization (residual SS=0).

SS was used to stratify the comparison between coronary artery bypass graft and percutaneous coronary intervention in the SYNTAX trial, so that apparently the benefits of coronary artery bypass graft over percutaneous coronary intervention remained only in the highest SS tertiles. We cannot forget that these subgroup comparisons were performed post hoc and with small sample sizes. Furthermore, the alternative hypothesis had not been demonstrated. Therefore, we believe subgroup analysis results could be interpreted only as being hypothesis originating. On the other hand, SS reproducibility is limited. The SYNTAX Investigators assessed the reliability of SS by comparing the score obtained by different well-trained observers when calculating the SS for the same angiography. The weighted $\kappa$ measures the agreement between $\geq 2$ observations. Weighted $\kappa >0.75$ represents excellent agreement beyond chance; 0.40 to 0.75, fair to good agreement; and $<0.40$, poor agreement. In that study, Serruys et al reported a weighted $\kappa$ for the observations of the global score of 0.45; the weighted $\kappa$ for the number of lesions was 0.59; and weighted $\kappa$ for bifurcations was 0.41. Although the weighted $\kappa$ values were $>0.4$, in our opinion, the degree of agreement was still lower than desired.

Given the limited power of the SS to predict outcomes after coronary artery bypass graft or percutaneous coronary intervention, SS II was developed by the SYNTAX Investigators. This new score added some clinical items to improve the risk prediction among patients with complex coronary disease. Although it demonstrated an accurate prediction of 4-year mortality (greater than the original SS), SS II was complex to calculate and, like the SS, had poor reproducibility. The more variables it has, the greater its complexity is, and the less parsimonious a score is, the less useful it becomes.

Before the present article by Farooq et al, a basic principle of coronary revascularization remained unchanged: Complete revascularization is always better. After performing a (once again) non-randomized subgroup analysis with limited sample sizes (and thus limited statistical power to detect differences), the authors concluded that some degree of incompleteness of revascularization (residual SS $\leq 8$) might be acceptable. We should be cautious when assuming these conclusions because they are, once again, hypothesis generating.

Although the 3 scores mentioned before are widely used in everyday practice, we believe the decision on the optimal revascularization treatment must not completely rely on these scores yet. Further studies must be performed to prospectively assess their true accuracy and reproducibility.

References


Disclosures

None.

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