Risk Scores in Acute Coronary Syndrome: Separating the Wheat from the Chaff

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The acute coronary syndromes (ACS) are responsible for more than 1.7 million annual hospitalizations in the United States, constituting one of the most frequent manifestations of medical emergencies. The Dante Pazzanese Risk Score[1] for ACS without ST-segment elevation is an ambitious initiative, pioneer at national level and created to estimate death or reinfarction in 30 days. It strives to be practical and has the theoretical advantage of originating from real-life Brazilian patients.

The most validated scores in ACS without ST-segment elevation, are the PURSUIT[2], the one from the TIMI[3] group and the general score for ACS of GRACE[4]. The Dante score is as simple to use as the others, uses variables that are similar to the aforementioned scores (age, antecedents, ECG, markers, creatinine, ACEI) and developed four risk groups – to better separate cases of moderate risk can be very interesting – from a "very low" to a "very high" risk, with 2% to 47% of events, respectively. In this score, the proportion of events is 23-fold higher in the most severe form (comparatively, the TIMI is 4 x 40%, or 10-fold higher).

The C statistic for the score scale was 0.74, demonstrating a good performance to identify the defined 30-day events (PURSUIT and GRACE have a C statistic of 0.80 and 0.81 for hospital death and 0.77 and 0.79 one-year death, respectively). The C statistic, therefore, is almost equivalent and has good prognostic capacity. But there is no mention in the article of the Hosmer-Lemeshow or goodness of fit test, important to inform whether there is or not a chance of event hyperestimation.

Additional doubts regarding the proposed score could be summarized in: do the patients with ACS treated at the Dante Pazzanese Institute reflect the average Brazilian patient? Why not included ischemia recurrence in the score? What was the percentage of each of the four groups among the 1,027 patients? Additionally, there are, surprisingly, only 14 patients with Killip > 1 in the studied population, a probable cause why congestive heart failure (CHF) was not significant in the multivariate and was left out of the score design. There is no mention in the references of a 2008 article, encompassed by the main International Societies[5], which redefines and tries to standardize diagnostic criteria of reinfarction and infarction, spontaneous and post-intervention, which has an important implication in the construction of the infarction and reinfarction scale, even after its construction.

Finally, a comparison with the other scores could have already been carried out, allowing additional and initial information on how this national score would behave in comparison to those globally validated and traditionally used in the international literature.

An adequate stratification is fundamental to transfer severe cases to places with more resources and to prevent unnecessary examinations or hospitalizations in individuals at low-risk or without ACS. These aspects are extremely useful for the efficient management of hospital beds and the scarce economical resources we have, offering, therefore, an opportunity to offer patients efficient and good-quality care[6-8]. The risk scores are better than the classification assessment as low, medium and high-risk, carried out isolatedly and individually by the clinician, where data as age, CHF, hemodynamic instability, creatinine and overestimation of isolated T-wave alterations often contribute to a higher number of diagnostic errors[9]. Additional efforts to refine our ACS risk assessment tool are welcome and the Dante risk score now needs to be validated in other centers to have its degree of use defined.

As our civilization changed its paradigms, with younger people using illicit drugs, women performing double workloads doubling their stress and our population getting older and presenting a higher occurrence of comorbidities, the challenges of the identification of ACS have increased. These aforementioned situations and the possibility of using more complex and high-cost equipment, medications and therapies demand an adequate separation between the wheat and the chaff and such is the challenge that the Dante score will face. With experienced and high-level cardiologists and a mature Brazilian Society of Cardiology, which effectively wants to contribute to improve the cardiovascular health of our population, we have to fight for better conditions for the treatment of ACS and offer domestic solutions that can contribute to improve the cardiovascular health of the Brazilian people. Our population will make the final evaluation of the merit that our researches and researchers have internationally. We believe that, as demonstrated in the article that prompted this Editorial, we are on the right track.

Key Words

Acute coronary syndrome; risk assessment; scores.

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