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EDITORIAL COMMENT

Replacing SCORE with SCORE2 in Portuguese primary care: News from the frontline of cardiovascular prevention

Substituição do SCORE pelo SCORE2 nos cuidados de saúde primários em Portugal – «notícias da frente» da prevenção cardiovascular

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''When trouble is sensed well in advance it can easily be remedied; if you wait for it to show itself any medicine will be too late because the disease will have become incurable.''

– Niccolò Machiavelli (1469–1527)

In the realm of preventive cardiovascular medicine, scoring systems play a central role in gauging the likelihood of adverse events and the potential benefit of pharmacological therapy. Despite their many limitations, scoring systems are useful to provide clinicians with a snapshot of an individual's risk and are widely used in clinical practice. In 2021, the European Society of Cardiology (ESC)'s guidelines on cardiovascular disease prevention introduced the second version of their Systemic Coronary Risk Estimation (SCORE2), designed to estimate the risk of cardiovascular events in apparently healthy individuals.[1,2] Unlike its predecessor, SCORE2 estimates the 10-year risk of both fatal and non-fatal cardiovascular events (which means that SCORE and SCORE2 cannot be compared directly). Another important difference is the classification of individuals into three risk categories according to age-specific thresholds: low-to-moderate risk (<2.5% if <50 years old or <5.0% if aged 50–69 years), high risk (2.5–7.4% if <50 years or 5.0–9.9% if 50–69 years), and very high risk (≥7.5% if <50 years or ≥10% if 50–69 years). Moreover, a special version for older people (SCORE2-OP) was also introduced, and European countries were divided into four risk strata, with Portugal being placed in the moderate risk group.

With these changes, what should be expected from the introduction of this new scoring system into clinical practice in Portuguese primary care? This was the seminal question that prompted Silva et al. to perform their study that is published in the current issue of the *Journal*.[3] Using data from the medical records of two Family Health Units, they assessed 1642 individuals aged 40–65 years without previous cardiovascular disease, diabetes or chronic renal failure. They calculated both SCORE and SCORE2, and categorized each patient's risk according to the respective thresholds. Finally, since individual low-density lipoprotein cholesterol (LDL-C) goals go hand-in-hand with risk classification, the authors assessed the potential implications of using the new SCORE2 for the attainment of LDL-C targets. Their findings can be summarized as follows: (1) while SCORE classified 98% of subjects as low or moderate risk, only 55% will remain in that category after using SCORE2; (2) more than 40% of the overall study population will be reclassified upwards

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(from low/moderate risk to high risk, or from high risk to very high risk), and hardly any individuals will be reclassified downward; (3) most of the risk reclassification will occur in younger patients (<50 years old); and (4) using SCORE2 instead of SCORE will decrease the proportion of those considered within the LDL-C target range from 39% to 20%, implying that greater efforts for LDL-C control will be needed.

Given these staggering differences, it is only natural that we ask ourselves whether the original SCORE really underestimated risk so much that a new, more sensitive SCORE2 was needed. The evidence shows that this was not the case at all. In fact, a direct comparison between the two scores shows similar discriminative power (c-statistic of 0.71 for SCORE and 0.72 for SCORE2), and SCORE2 appears to have comparable predictive power in Portuguese cohorts.[2,4] The fundamental difference lies not in the scores themselves but in the age-specific thresholds for risk classification introduced along with SCORE2 in the 2021 ESC guidelines. Two different individuals with the same SCORE2 result might be classified into different risk categories depending on their age. This blurring of the distinction between absolute and relative risk serves two purposes: to encourage the early initiation of treatment in younger patients whose absolute risk is not adequately depicted in scores; and to soften the requirement for treatment in older people whose risk comes mostly from their age. The early initiation of treatment in younger individuals (''the earlier the better'') is supported by recent evidence, but also poses significant challenges.[5] Convincing asymptomatic young people to undertake sustained lifestyle modifications and, in some cases, initiate (and adhere to) pharmacological treatment will be no easy task, as highlighted by the 80% of individuals whose LDL-C is over target according to the new SCORE2 classification. This shift in practice might also open new avenues for the refinement of risk stratification using cardiovascular imaging techniques such as coronary calcium scoring, probably the best tool for 'de-risking' individual patients.[6,7] Ongoing studies will tell us whether some of these people might benefit from focused screening.[8]

Finally, the authors are to be congratulated for bringing these results to our attention and enriching current discussions with Portuguese results from the frontline of primary care. In a country where local data are sometimes scarce, this is a welcome addition to our knowledge of what is happening and what to expect in the coming years. The integration of SCORE2 into electronic health records seems fundamental, but so does improved reimbursement of lipid-lowering medication, the inclusion of LDL-C control into healthcare performance metrics, and access to innovative treatments. Let us hope that Portuguese primary care physicians will receive all the tools they need to do their job well.

Conflicts of interest

The authors have no conflicts of interest to declare.

References

1. Visseren FLJ, Mac HF, Smulders YM, et al. 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice. Eur Heart J. 2021;42:3227–37.
2. SCORE2 Working Group, ESC Cardiovascular Risk Collaboration. SCORE2 risk prediction algorithms: new models to estimate 10-year risk of cardiovascular disease in Europe. Eur Heart J. 2021;42:2439–54.
3. Silva C, Mendes J, Ramos R, et al. Cardiovascular risk assessment in Portugal's primary health care system: SCORE vs. SCORE2. Rev Port Cardiol. 2024:S0870-2551(24)00067-2.
4. Temtem M, Mendonça MI, Santos M. Validation of the SCORE2 risk prediction algorithm in a Portuguese population: a new model to estimate 10-year cardiovascular disease incidence in Europe. Rev Port Cardiol. 2024:S0870-2551(24)00066-0.
5. Pencina MJ, Pencina KM, Lloyd-Jones D, et al. The expected 30-year benefits of early versus delayed primary prevention of cardiovascular disease by lipid lowering. Circulation. 2020;142:827–37.
6. Nasir K, Rubin J, Blaha MJ, et al. Interplay of coronary artery calcification and traditional risk factors for the prediction of all-cause mortality in asymptomatic individuals. Circ Cardiovasc Imaging. 2012;5:467–73.
7. Bettencourt N, Mendes L, Fontes JP, et al. Consensus document on chronic coronary syndrome assessment and risk stratification in Portugal: a position paper statement from the Portuguese Society of Cardiology's Working Groups on Nuclear Cardiology, Magnetic Resonance and Cardiac Computed Tomography, Echocardiography, and Exercise Physiology and Cardiac Rehabilitation. Rev Port Cardiol. 2022;41:241–51.
8. van der Aalst CM, Denissen SJAM, Vonder M, et al. Screening for cardiovascular disease risk using traditional risk factor assessment or coronary artery calcium scoring: the ROBINSCA trial. Eur Heart J Cardiovasc Imaging. 2020;21:1216–24.