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Importance and usefulness of SCORE2 in Cardiovascular Prevention

Importância e utilidade do SCORE2 na Prevenção Cardiovascular

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Cardiovascular (CV) prevention strategies in individuals without established atherosclerotic disease are based on risk assessment using easy-to-scrutinize clinical indicators that constitute risk scores. After the release of the Framingham Risk Score in 1998¹, several other scores were developed, including the SCORE (Systemic Coronary Risk Estimation) in 2003 and the recent SCORE2 and SCORE2-OP, incorporated into the 2021 CV Prevention Guidelines of the European Society of Cardiology.²⁻³

These guidelines recommend that, in the opportunistic or systematic assessment of apparently healthy asymptomatic individuals, these scores be used to clarify CV risk, particularly in primary health care.³ The availability online of calculators for these scores enables immediate risk stratification of individuals, facilitates doctor-patient communication and guides the most appropriate therapeutic decisions.

However, a word of caution is appropriate because although these tools, robustly validated, standardize procedures, they are not infallible, therefore justifying the exercise of clinical reasoning in many day-to-day situations.⁴

In this issue of the Journal, Pereira Santos et al.⁵ present the results of a study carried out in the field of primary care in which they compared the performance of SCORE and SCORE2 in assessing CV risk in a population of individuals with uncomplicated arterial hypertension. This initiative, due to the information it details and the challenges it projects, deserves careful reading and our praise.

The population eligible for the study is from the database of a family health unit and includes 1212 individuals with uncomplicated hypertension and aged

between 40-69 years, of whom 558 (46%) were excluded. Some caution is required when generalizing the results, as the authors, in fact, make clear.

As already reported by others⁶⁻⁷, the use of SCORE2 promoted a significant transfer of individuals to higher risk classes. In the present work, it meant the reallocation of 381 of the 636 (60%) low/moderate risk individuals in the SCORE to the high or very high-risk class in the SCORE2. As a natural consequence of this transition, the desirable LDL-C target values according to the standard of care have fallen, and have become more demanding, revealing, for example, that only 21 [of 378 individuals (8.6%)] high/very high risk reached it, which, incidentally, is in line with recent data from the national reality.⁸

This study justifies some questions: how was the diagnosis of hypertension made? What methodology was followed? Does the quality of the procedures guarantee that there are no individuals with white-coat hypertension or masked hypertension?⁹

Although recognized as one of the limitations of the study, how can the high number of patients without medical appointment (n=303) and analysis of the lipid profile (n=220) be explained and what reflection does it deserve, when this is imperative in a disease with high vascular risk?¹⁰ However, the authors rightly recognized the importance of these exclusions in the limitations of the study.

In SCORE2, the lipid profile is represented by non-HDL cholesterol (non-HDL COL), which was certainly used by the authors. It is worth remembering that non-HDL idCOL represents all lipoproteins that contain apolipoprotein-B and is considered an alternative to LDL-C, both in diagnosis and treatment, especially in obese individuals or those with hypertriglyceridemia or metabolic syndrome/diabetes³. In our opinion, it deserved to be incorporated into the results and discussion.

Finally, this study highlights the importance of CV risk assessment in primary health care, which continues to be the gateway to the health system for everyone; it advises the use of the SCORE2 algorithm, due to the fact that Portugal, contrary to what was understood in the old SCORE, is now considered a country with moderate risk and, as a result, has seen the individual risk of our fellow citizens increased; it reveals the slowness of the Direção Geral Saúde (DGS) in scientifically updating its recommendations, which discredits the directives [see the Hypertension Standards (DGS Standard 020/2011 updated on 03/19/2013) and CV Risk Standards (Norm 005/2013, updated on 01/21/2015)]; it recognizes the need to improve medical records, especially in diseases with high CV risk; it highlights and confirms, like others, the low rate of lipid control in all risk classes; and indicates the need for greater commitment and firmness in implementing more effective therapeutic measures.

The authors have no conflicts of interest to declare.

REFERENCES:

1. Wilson PW, D'Agostino RB, Levy D, Belanger AM, *et al.*
Prediction of Coronary Heart Disease Using Risk Factor Categories
Circulation 1998;97(18):1837–47. doi:10.1161/01.cir.97.18.1837
2. Graham IM, Di Angelantonio E, Huculeci, R. *et al.*
New Way to “SCORE” Risk: Updates on the ESC Scoring System and
Incorporation into ESC Cardiovascular Prevention Guidelines
Curr Cardiol Rep 2022;24: 1679–1684. <https://doi.org/10.1007/s11886-022-01790-6>
3. Visseren FLJ, Francois M. *et al.*
2021 ESC Guidelines on cardiovascular disease prevention in clinical practice.
Eur Heart J 2021;00:1111. <https://doi.org/10.1093/eurheartj/ehab484>.
4. Sniderman A, Pencina M, Thanassoulis G.
Clinical reasoning and prevention of cardiovascular disease.
J Clin Lipidol 2021;15:394–398. <https://doi.org/10.1016/j.jacl.2021.04.001>
5. Pereira Santos S, Guedes S, Pesqueira R. *et al.*
Cardiovascular risk assessment using SCORE2 in a hypertensive population -
the reality from a primary health care unit.
Rev Port Cardiol 2024;43
6. Temtem M, Mendonça MI, Santos M. *et al.*
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, <https://doi.org/10.1016/j.repc.2023.10.011>
7. Csenteri O, Jancso Z, Szollosi GJ, *et al.* Differences of cardiovascular
risk assessment in clinical practice using SCORE and SCORE2. *Open Heart*
2022;9:e002087. doi:10.1136/openhrt-2022-002087
8. Gavina C, Carvalho DS, Pardal M, *et al.*
Cardiovascular Risk Profile and Lipid Management in the Population-Based
Cohort Study LATINO: 20 Years of Real-World Data. *J Clin Med* 2022;11(22).
<https://doi.org/10.3390/jcm11226825>
9. Graça Magalhães.
Cumprimento das boas práticas de medição da pressão arterial nos cuidados
de saúde primários.Mestrado Integrado de Medicina. Universidade Coimbra.
Faculdade de Medicina. Abril 2019. (acedido a 06/07/2024)
10. Direção-Geral da Saúde.
Processo Assistencial Integrado do Risco Cardiovascular no Adulto. 2014.
(acedido a 06/07/2024).