Cardiovascular Disease Risk Prediction Models and Scores

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Despite a tremendous effort, which has been made by health bodies over the last decades and dedicated basic and clinical research, cardiovascular diseases remain the most challenging problem worldwide associated with prominent mortality and morbidity [1, 2]. Focused on that, and in line with other areas, such as oncology, the aim of current research in cardiovascular disease is gradually turning into a novel personalised medicine approach. Risk assessment has become an essential tool in the prevention of cardiovascular disease nowadays.

The Framingham Heart Study was the first observational study to investigate cardiovascular risk factors [3]. The Framingham ASCVD risk assessment tool has been validated in black and white populations in the USA. It is transportable to culturally diverse populations in Europe, Mediterranean, and Asia [4].

After the success of the Framingham Heart Study, new tools, scores, and models were created in order to analyse the prediction of severe cardiovascular risk factors, diseases, and their comorbidities, with the evaluation of simple parameters [5, 6]. This effort aims to stratify patients according to their characteristics. Each risk algorithm has its limitations, so different algorithms should be used in different patient populations. Risk algorithms are made available for use in daily clinical practice by means of interactive tools available online.

Do we need to develop more scores? The answer is ‘yes’. First, new biomarkers or new ways of measuring the outcomes become available and affordable. Second, existing scores become outdated. Finally, new treatments are more specific for certain diseases or subgroups of patients.

In this way, prediction models, both diagnostic and prognostic, are becoming increasingly abundant in the medical literature. To help the clinician choose the right tool for the right patient, a summary of available tools should be provided. When choosing a tool, physicians should consider medical history, geographical region, clinical guidelines, and additional risk measures, among other things. Moreover, the timing of the utilisation of each prognostic score (baseline status at diagnosis or status at follow-up after treatment initiation) should be tailored according to the findings of the corresponding clinical trials.

In this current thematic issue, the journal aims to provide the rationale for using risk prediction tools as well as a compilation of the currently available ones for a wide variety of cardiovascular diseases.

REFERENCES


