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CVD prediction model in Korea: current status and challenge

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Research into cardiovascular disease (CVD) prediction models has long been a vibrant area of study in Western countries. These models have become essential components of guidelines for managing dyslipidemia, diabetes, hypertension, and the prevention of CVD. In Korea, interest in CVD prediction research has surged since the 2000s. However, the integration of CVD prediction models into clinical guidelines and their active application in clinical settings has been limited. This limitation is partly due to the scarcity of models that are developed and validated across diverse and representative cohorts. Additionally, the relatively lower incidence of CVD in Korea compared to Western populations diminishes the efficiency of these models in pinpointing individuals at high risk who would benefit from treatment.

There is an urgent need for the development of CVD prediction models tailor-made for the Korean population. Critical to this endeavor is the research and discussion necessary to establish cutoff levels for intervention based on the CVD risk estimated by these models. Determining such thresholds is vital for the models' effective application in clinical practice, ensuring that interventions are appropriately targeted at individuals at significant risk.

Furthermore, advancements in CVD prediction performance are necessary. Future models should account for the visit-to-visit variability in data from periodic health examinations and integrate novel biomarkers, while also adopting state-of-the-art methodologies, such as artificial intelligence. By addressing these challenges, we can enhance the predictive accuracy of CVD risk assessments and facilitate the identification of high-risk individuals. This progress will lead to a better integration of predictive models into clinical practice and targeted interventions, ultimately reducing the burden of CVD in Korea.