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Additional information needed to predict CHD and cardiovascular events in stabilized patients. What we know today and what we should know?

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In recent years, clinical and genetic markers of coronary heart disease (CHD) and major cardiac events (MACE) were described, which led to the development of various models for diagnostics and prediction of these conditions. However, a search for models with a highest informative value is continued. Researchers propose additional characteristics within the scope of their interests and focus attention on genetic and biochemical markers (lipids, C-reactive protein etc.), data of instrumental examination (heart rate variability, coronary angiography, MRI etc.) and other. Our studies suggest that the accuracy of a model depends on many factors, such as object of prediction (i.e. atherosclerotic plaque or ischemia), signs included, method of machine learning, variable characteristics of selected patients etc. In particular, sensitivity and specificity of prediction of coronary atherosclerosis with the same set of included signs may vary from 0.8364 and 0.3684 (random forest method), 0.8000 and 0.5614 (ANN), 0.6545 and 0.4912 (logistic regression), and 0.6182 and 0.5439 (SVM), respectively.

In this respect, it seems important to discuss the trends of the development of prognostic models for CHD from the point of modern understanding of its pathogenesis and goals for decision-making. We propose several multifactorial prognostic and diagnostic models for coronary atherosclerosis, myocardial ischemia, and MACE, and analyze their similarities, differences, informative value in different groups of patients.

Biography

Svetlana Gorokhova graduated from the Faculty of Medicine at N.I. Pirogov 2nd Moscow Medical Institute, Russia and received PhD degree in 1986. Since 2002 she is a Full Professor at I.M. Sechenov First Moscow State Medical University, Russia and she is also the Head of Laboratory of Experimental Cardiology in Clinical Research Center of JSC Russian Railways. Her work is dedicated to problems of cardiology, health care organization, and implementation of new technologies into 'real-life' clinical practice. She organizes and participates in interdisciplinary projects on environmental and genetic risk factors of cardiovascular diseases.

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