

New biomarkers to provide cardiovascular disease early warning

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The long-term goal of the EU-MASCARA (Markers for sub-clinical cardiovascular risk assessment) project has been to apply these new biomarkers in a way that aids clinical practitioners in risk prediction and early intervention. The most robust biomarkers will be implemented in novel biochip based assays for clinical use.

By detecting very early stages of cardiovascular diseases that are not yet causing symptoms, these markers could help medical staff to assess a patient's risk for developing symptomatic disease and thus facilitate earlier preventive treatment. This will help to cut healthcare costs and ultimately save lives. Cardiovascular disease, which can lead to heart attacks, heart failure and stroke, is among the leading causes of death worldwide.

The consortium has been heavily supported by contributions from SMEs in key areas of high tech research such as biomarker testing, data handling and analysis and assay development. While healthcare R&D is an expensive and often time consuming activity, the potential market opportunity for new analytical tools that offer accuracy and cost reductions is huge.

The project team is now working on combining these new biomarkers with more established ones in order to develop a cohesive predictive model. This will help to achieve more integrated analysis of complex data related to cardiovascular disease. Certain factors such as increased blood pressure and high cholesterol have often been linked to a higher risk of cardiovascular disease, but a precise assessment of these parameters – and thus a precise means of predicting cardiovascular health – has not been fully achieved.

This then has been the goal of the EU-MASCARA project. Blood and urine samples from 350 patients with and without hypertension were analysed in order to select molecules that could be used to identify cardiovascular disease risk. Data from another cohort of 800 patients was also used to identify biomarkers.

Peptides were developed to be measured in urine, and the project team was able to demonstrate their efficacy in predicting cardiovascular events such as heart attacks. This means that these peptide panels have the potential to pick up very early stages of cardiovascular disease, where there would still be time to prevent further progression of the disease.

Patients were also monitored for cardiac function, with special focus given to renal disease as a high risk factor for [cardiovascular disease](#). Genetic markers and factors related to cardiac structure, function and inflammation have also been investigated for their predictive potential.

Finally, health economic analyses have been conducted in order to inform policy makers and stakeholders of the economic and societal value of biomarker assessment. The results of the EU-MASCARA project, scheduled for completion in May 2016, will be presented at prominent symposia and will continue to be published in relevant cardiovascular journals.

More information: For further information please visit the EU MASCARA project website: www.eu-mascara.eu/index.php

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