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Press Information
for immediate release

Invisible danger: Cardiovascular diseases on the rise

EU Project SysVasc is studying the cause and accelerating prevention

Graz, on February 12, 2014: Cardiovascular diseases, like coronary heart disease, infarct, heart failure and stroke are number one killers in the Western world, and after onset of one of these diseases, the affected person often has a life of suffering ahead of them. The individual causes of these chronic illnesses are still mostly unknown. Under the coordination of the Medical University of Graz, an international team of leading researchers is contributing to the EU project 'SysVasc' for the purpose of clarifying the cause of disease and promoting preventative measures and innovative therapeutic methods. The project will be headed by Prof. Burkert Pieske, head of the Division of Cardiology at the Medical University of Graz.

Cardiovascular Diseases – the invisible danger

The number of patients worldwide who suffer from cardiovascular disease is on the rise, and in recent years these diseases have most often been named as the cause of death. "It is especially alarming now that increasingly young people are being affected by cardiovascular disease", explains Prof. Burkert Pieske. Despite rising numbers of disease incidences, there remains relatively little knowledge about the individual cause of these chronic illnesses. "The danger of cardiovascular disease lies especially in the fact that they develop in the body over years, undiscovered, until they present themselves as symptoms like chest pain or even heart attack", says Burkert Pieske about the behaviour of these diseases. Therefore, comprehensive knowledge of the pathophysiological processes that lead to this disease pattern is urgently needed. In order to prevent sufferers from irreparable damage, special emphasis is put on prevention and early detection, but the identification of targeted treatment measures is also critical.

EU Project SysVasc – The search for pathological tissue changes

With the start of the EU project entitled "Systems Biology to Identify Molecular Targets for Vascular Disease Treatment" (SysVasc), the European Commission declared their support in the fight against this threatening set of diseases. The goal of the project is to identify the molecular causes of pathological tissue changes that can lead to the manifestation of cardiovascular disease. For the first time in a large research consortium, SysVasc uses modern, systematic medical approaches that can contribute to early and individual diagnosis and treatment through the use of new biomarkers from blood and urine (personalised medicine). "Based on a comprehensive cause study, early detection will be improved in the future and tailored to individuals. This will improve the effectiveness, specificity and side-effects of treatment", summarizes Burkert Pieske. The FP7 project funded by the European Commission is being coordinated by the Medical University of Graz, was funded with 6 million Euros and will run for 4 years.

International causational research coordinated by the Medical University of Graz
In order to reach the project goal, an international team will bundle their impressive competences. More than 30 leading scientists from 10 different countries will examine tens of thousands of patients under the leadership of Burkert Pieske. He looks optimistically into the future by explaining that “this uniquely high number of data sets will allow us to investigate the actual causes of cardiovascular disease”. In addition, these scientists are working on a novel approach to proteomic sample analysis from the field of systems biology. This innovative, non-invasive diagnostic procedure allows disease-specific changes to be made visible, meaning that they can be applied as diagnostic biomarkers.
As a consequence of this ground-breaking research, completely new pathways in pharmaceutical development can be pursued. Based on individualized risk assessment and the early detection of cardiovascular changes, personalised prevention and therapeutic concepts tailored to the affected individual can be developed. This would ensure that possible future cardiovascular disease is treated before it is even noticed and has the chance to cause irreparable damage.

Facts and Figures
Project: Systems Biology to Identify Molecular Targets for Vascular Disease Treatment
Short title: “SysVac”
Coordinator: Medical University of Graz
Head: Prof. Burkert Pieske
Type: Project in the 7th EU framework programme
Funding: 5,976,413 Euro for the entire consortium
Duration: 4 years

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