

Joint Press release

How does the non-alcoholic fatty liver disease develop: From diagnosis to treatment

Scientists at the University Medical Center Mainz essentially involved in European Research Project

(Mainz, May 19, 2015 ok,) Up to 30 percent of Europe's population suffers from nonalcoholic fatty liver disease (NAFLD). According to forecasts of the American Association for the Study of Liver Diseases (AASLD), the European Association for the Study of the Liver (EASL) and the German Society of Digestive and Metabolic diseases (DGVS) fatty liver disease could become the main indication for liver transplantation in 2020. Why does the disease progress faster in some cases? What are the reasons for it being lethal in the worst case? These questions are the focus of an international Research Project in which scientists of the University Medical Center Mainz are involved. The European Commission supports this project named "Elucidating Pathways of Steatohepatitis (EPoS) "as part of the research program" Horizon 2020 " financially with a total of approx. six million euros. The researchers from Mainz receive 260.000 Euros for their subproject.

The goal of the research project EPoS is to understand the process of the development of non-alcoholic fatty liver disease and to developing better diagnostic tools and therapies. In this context a major question is: Which genetic and environmental factors influence the course of NAFLD towards cirrhosis? Among several factors, predispositions for type 2 diabetes type 2 or for cardiovascular disease play an important role. With the answers obtained in this multinational project, scientists and clinicians hope to also shed light on why many patients tolerate NAFLD relatively easy, while some die of it.

The studied patient cohorts and their follow up are key to the development of sensitive (serum) biomarkers for individual risk assessment, regular therapy control and thus effective therapies.

"At present, the assessment of the severity of non-alcoholic fatty liver disease is based on liver biopsy. In this case, a small tissue sample is removed from the liver. This is a relatively cost-intensive process which incurs patient discomfort, costs and a risk. In addition, the biopsy is inaccurate and does not reflect the dynamics of the disease. "Therefore, developing better blood tests that measure the severity of liver inflammation and scarring in NAFLD is a core intention of EPoS", underlines Professor Dr. Dr. Detlef Schuppan, Director of the Institute for Translational Immunology (TIM) of the Mainz University Medical Center, who leads the Work Package for biomarker development in EPoS. Moreover, PD Dr. Jörn Schattenberg of the I.Dept. of Medicine is involved in patient recruitment for EPoS.

In order to better understand the process of the development NAFLD, several approaches of 'Omics'-based studies are performed in a large, well-defined patient cohort of patients observed in a follow-up design. This, Omics'-based research yields information on gene activity and describes how genes function, interact with each other and how they react to environmental influences. In the accompanying proteomics, metabolomics and lipid omics Research, proteins, lipids and metabolites are investigated, especially in the blood, as indicators of altered metabolic, inflammatory or fibrotic processes in the diseased liver and the associated peripheral organs. "Chances are that the basis of the different ,Omics' approaches can create a multi-dimensional data set, that further sheds light on the process of development of NAFLD", Dr. Jörn Schattenberg comments.

In addition to scientists from the University Medical Center Mainz, scientists from the Universities in Newcastle, Cambridge, Torino, Florence, Paris and Helsinki, as well as Government agencies such as the National Research Council of Italy and the French Fondation de Cooperation Scientifique are involved in EPoS. Moreover, private companies such as the Danish Steno Diabetes Center AG, Nordic Bioscience Biomarker Development AG, Herlev/Copenhagen, and the Limited iXscient, UK, are involved. The research project is funded for four years. In addition to the direct funding by the EU, it is expected that the created multinational platform will trigger numerous other research projects in the field of fatty liver disease, liver and metabolic inflammation, and fibrosis / cirrhosis.

Contact

Univ.-Prof. Dr. Dr. Detlef Schuppan, Director of the Institute for Translationale Immunology at The University Medical Center of the Johannes Gutenberg-University Mainz,
E-Mail: Detlef.Schuppan@unimedizin-mainz.de

PD Dr. Jörn Schattenberg, I. Dept. Med., University Medical Center of the Johannes Gutenberg-University Mainz,
Telefon 06131 17-6074, E-Mail: joern.schattenberg@unimedizin-mainz.de

Press Contact

Oliver Kreft, staff position Communication and Press University Medical Center of the Johannes Gutenberg-University Mainz,
Telefon 06131 17-7424, Fax 06131 17-3496, E-Mail: pr@unimedizin-mainz.de