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Genome-wide study for circulating metabolites identifies 62 loci and reveals novel systemic effects of LPA

No side effects for a new heart disease drug found

New research has found that an upcoming heart disease drug is apparently free of strong side effects – this was made possible by the use of genetic and metabolic information, together with electronic health records. The new drug target, the *LPA*-gene, is a promising new target to prevent heart disease on the top of existing drugs such as statins. The researchers were studying genetic determinants of human metabolism that directed them to study the *LPA*-gene in great detail. They uncovered that the *LPA*-gene is modifying individuals' lipid metabolism in a previously unknown way. By taking advantage of extensive electronic health records, the researchers were able to show that *LPA* is exclusively associated with heart disease risk, and not with other strong morbidities.

"This research also introduces a new influential concept, as we were using genetic and metabolic information, together with extensive electronic health records, to evaluate potential side effects of an emerging drug, before it is even tested in a clinical trial", says Dr. **Johannes Kettunen**, one of the study leaders from the University of Oulu, Finland. "Naturally, the drug trials will still have to be finished in order to evaluate the potential risks of the new LPA-drug in detail", **Kettunen** continues. This type of research is expected to boost drug development by making it faster and more cost-effective.

Blood samples from over 37 000 European volunteers were analysed and the detailed metabolic measurements were obtained using a serum metabolomics technology developed in Finland. The protein produced by the *LPA*-gene forms lipoprotein(a) which is a heart disease risk factor independent of cholesterol. For those people who have high circulating lipoprotein(a) levels this new drug is believed to be particularly helpful. The findings published now suggest safe *LPA*-targeted intervention to reduce cardiovascular risk.

The study was conducted in international collaboration including researchers from Finland, Germany, Estonia, the Netherlands and the UK. The researchers are not connected with the company developing the drug.

Reference:

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