

Publication**Function impairing polymorphisms of the hepatic uptake transporter SLCO1B1 modify therapeutic efficacy of statins in a population based cohort****Journal Article (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 2719931**Author(s)** Meyer zu Schwabedissen, H. E.; Albers, M.; Baumeister, S. E.; Rimmbach, C.; Nauck, M.; Siegmund, W.; Voelzke, H.; Kromer, H. K.**Author(s) at UniBasel** [Meyer zu Schwabedissen, Henriette](#) ;**Year** 2015**Title** Function impairing polymorphisms of the hepatic uptake transporter SLCO1B1 modify therapeutic efficacy of statins in a population based cohort**Journal** Pharmacogenetics and genomics**Volume** 25**Number** 1**Pages / Article-Number** 8-18**Keywords** drug efficacy, hypercholesterolaemia, OATP1B1, statins**Mesh terms** Adult; Aged; Aged, 80 and over; Biomarkers, Pharmacological; Coronary Disease, pathology; Fatty Acids, Monounsaturated, administration & dosage; Female; Genetic Association Studies; Genotype; Humans; Hydroxymethylglutaryl-CoA Reductase Inhibitors, administration & dosage; Indoles, administration & dosage; Lipid Metabolism, genetics; Lovastatin, genetics; Male; Middle Aged; Organic Anion Transporters, genetics; Pravastatin, genetics; Risk Assessment; Simvastatin, administration & dosage; Solute Carrier Organic Anion Transporter Family Member 1b1

BackgroundThe efficacy of statins, which are used commonly in primary and secondary prevention of cardiovascular diseases, shows a wide range of interindividual variability. Genetic variants of OATP1B1, a hepatic uptake transporter, can modify access of statins to its therapeutic target, thereby potentially altering drug efficacy. We studied the impact of genetic variants of OATP1B1 on the lipid-lowering efficacy of statins in a population-based setting.

Materials and methodsThe basis of the analysis was the Study of Health in Pomerania, a cohort of 2732 men and women aged 20-81 years. Included in the statistical analysis to evaluate the impact of OATP1B1 on therapeutic efficacy of statins were 214 individuals diagnosed with dyslipidaemia during initial recruitment and receiving statins during the 5-year follow-up.

ResultsAnalysing the impact of the OATP1B1 genotype, we observed a trend for lower statin-induced total cholesterol reduction in carriers of the SLCO1B1 512C variant. Restricting the analysis to patients receiving simvastatin, pravastatin, lovastatin and fluvastatin indicated a statistically significant association of the OATP1B1 genotype on lipid parameters at the 5-year follow-up. No such effect was observed for atorvastatin. Calculation of achievement of treatment goals according to the NCEP-ATPIII guidelines showed a lower rate of successful treatment when harbouring the mutant allele for patients taking simvastatin (46.7 vs. 73.9%). A similar trend was observed for pravastatin (34.4 vs. 70.4%).

Conclusion-Genetic variants of OATP1B1 leading to impaired hepatic uptake of statins translated into reduced drug efficacy in a population-based cohort. (C) 2014 Wolters Kluwer Health vertical bar Williams & Wilkins.

Publisher Lippincott Williams & Wilkins**ISSN/ISBN** 1744-6872**edoc-URL** <http://edoc.unibas.ch/dok/A6337453>**Full Text on edoc** Available;**Digital Object Identifier DOI** 10.1097/FPC.0000000000000098**PubMed ID** <http://www.ncbi.nlm.nih.gov/pubmed/25379722>

ISI-Number WOS:000346632900002

Document type (ISI) Article