STRESZCZENIE W JĘZYKU ANGIELSKIM (SUMMARY)

Title: Assessment of the impact of genetic mutations in familial hypercholesterolemia on the efficacy of contemporary lipid-lowering therapy

This doctoral dissertation comprises three thematically coherent publications focused on familial hypercholesterolemia (FH), specifically emphasizing genetic determinants, diagnostic approaches, and treatment strategies. The series includes a review paper, an original paper, and a case report. The review paper, titled "Genetic Backgrounds and Diagnosis of Familial Hypercholesterolemia," presents a comprehensive analysis of existing literature, summarizing the current understanding of FH's prevalence and clinical manifestations. It delves into the various genetic mutations associated with FH, the significance of genetic testing, and diagnostic scales. Furthermore, it highlights the crucial role of early disease diagnosis and cardiovascular disease prevention in suspected FH cases. This paper sets the stage for subsequent publications in the series, as lipid disorders significantly contribute to atherosclerosis risk, and FH often goes undetected. Early disease confirmation and timely treatment are pivotal in mitigating the risk of premature cardiovascular events and improving overall life expectancy.

The original paper "Gene Mutation in Patients with Familial Hypercholesterolemia and Response to Alirocumab Treatment—A Single-Centre Analysis" explores the impact of genetic mutations on the efficacy of alirocumab treatment. It is one of the few studies demonstrating that individuals with a double mutation exhibit a diminished response to alirocumab therapy. This underscores the significance of genetic testing to tailor the most suitable lipid-lowering therapy.

The series concludes with a case report titled "Challenges in the management of familial hypercholesterolemia: a case report," which details the management of a patient with heterozygous FH and complete statin intolerance. Despite not responding to alirocumab treatment, the patient experienced a decreased LDL cholesterol fraction only after the introduction of inclisiran. This case highlights the criticality of selecting the appropriate therapy and the challenges that may arise in achieving therapeutic goals.

These three publications form a cohesive thematic series that explores the genetic basis and clinical manifestations of familial hypercholesterolemia and the various types of modern lipid-lowering therapy and their appropriate selection.