Streszczenie w języku angielskim - Summary

Aim: The aim of the thesis was to evaluate the influence posed by the natural course of the disease and the implemented therapy based on intravitreal anti-VEGF preparations on the condition of the choroid in patients with recently diagnosed exudative form of age-related macular degeneration (AMD). Comparing results of measuring subfoveal choroidal thickness (SCT), performed during the therapy, covering 12-month long observation period, enabled to establish whether the type of administered anti-VEGF preparation and the duration of the therapy and the number of performed intravitreal injections influence the choroid morphology. These studies aimed to clarify whether the response to the implemented therapy depends on the changes in choroidal thickness.

Patients and method: The study included 51 patients with recently diagnosed exudative form of AMD, treated in the Ophthalmological Clinic of Medical University in Białystok in 2019 and 2020, along with 20 healthy people, constituting the reference group, compliant with the study group as far as gender and age is concerned. The study covered three stages: I – the preliminary basic eye examination of patients from both groups, expanded with the optical coherence tomography (OCT) and an enhanced depth imaging OCT (EDI-OCT) of the macula of the retina (the Heidelberg Spectralis device) in order to measure the central thickness of the retina and the subfoveal choroidal thickness; II – the examinations from the first stage were repeated in patients from the reference group and in randomly selected patients treated with ranibizumab or aflibercept, 4 weeks after the administration of the loading dose of the drug, that is after three intravitreal injections; III – subsequent repetition of all examinations in patients from the study group and the reference group after a year following the first evaluation. Obtained results were statistically analysed. In order to evaluate the impact of the anti-VEGF therapy on SCT the researchers compared the treated patients with the healthy ones; the group of people treated with ranibizumab was compared with the group treated with aflibercept; as well as the group of patients who responded well to the anti-VEGF therapy with the group of patients who did not respond to treatment.

Results: Prior to implementing therapy, the average SCT in patients with recently diagnosed exudative form of AMD was statistically significantly lower than in healthy people ($p=0.02$). After administering 3 loading doses of the anti-VEGF therapy the researchers observed a considerable reduction in SCT ($p<0.0001$), which, with small variations, remained stable for a 12-month period ($p<0.0001$). The SCT reduction in the study group exceeded the changes

reported in the reference group comparable as far as gender and age is concerned, considerably (14.7% vs. 1.3% during one year). Both implemented preparations, ranibizumab and aflibercept, revealed comparable impact on the choroidal thickness throughout the whole period of observation. The study did not reveal a dependence between the SCT and the number of performed injections of the anti-VEGF preparation. In people who responded well to the therapy the researchers noted a greater reduction in SCT after the loading dose (by 18.3%) and after 12 months (by 17.4%), when compared with the initial value, than in people not responding to the treatment (by 7% in both studied periods).

Conclusions: The exudative form of AMD is characterised by a reduced choroidal thickness when compared with healthy individuals. The reduction in the subfoveal choroidal thickness (SCT) in patients with AMD can be observed already after the administration of the loading dose of the anti-VEGF preparation and it remains stable, with small variations, for a period of 12 months after the initiation of the therapy. The size of this reduction exceeds significantly the physiological changes observed in the choroid of healthy people. What concerns Caucasian population, the impact that ranibizumab and aflibercept have on SCT is comparable. The year-long observation revealed that changes in the SCT in people treated due to the exudative form of AMD do not depend on the number of ranibizumab injections, administered into the vitreous chamber. Measurements focusing on the subfoveal choroidal thickness can be applied in clinical practice as a prognostic factor and a biomarker indicating the degree of the response to therapies based on anti-VEGF preparations in patients with exudative form of AMD.