9. SUMMARY

Introduction: Obesity is a chronic disease that is taking on epidemic proportions worldwide. There are various causes of obesity, and Hashimoto's disease is also one of the endocrine factors that contribute to weight gain. Studies show a positive correlation between BMI and TSH concentration. Also, the growing percentage of body fat contributes to the increase in TSH concentration.

The problem of obesity among patients with Hashimoto's disease requires the search for an effective solution in the field of weight reduction. We often observe unsuccessful attempts to reduce body fat, and thus the increasing risk of metabolic syndrome. This risk is greater in patients with TSH> 2.5 IU / ml [169]. Problems related to carbohydrate metabolism also show a relationship with TSH or anti-thyroid antibody levels. The problem is complex and requires a comprehensive approach to the treatment of obesity in patients with Hashimoto's disease, requires cooperation of specialists from various fields of medicine and health sciences.

Aim of the study: The aim of the study was to assess the effectiveness of the elimination diet in reducing body weight in patients with Hashimoto's disease and to assess the impact of weight reduction on selected metabolic parameters and improvement of thyroid parameters. For this purpose, an analysis was made of the relationship between the type of diet used and the amount of body fat reduction, BMI, muscle tissue and water. The relationship between weight reduction and diet applied with TSH, fT3, fT4 and anti-thyroid antibodies as well as fasting lipids and glucose were analyzed. Correlation analyzes were also carried out to determine the min. is there a relationship between a change in body fat percentage and a change in BMI, and a change in thyroid antibody concentration and a change in fasting glucose. The influence of the applied nutritional intervention on the occurrence of gastrointestinal complaints was analyzed.

Material and methods: The study included 100 patients, aged 18-65, with BMI> 30kg / m2 and diagnosed with Hashimoto's disease, who reported to the GRMED Medical Diet Clinic in Sopot for the dietary treatment of obesity. The study was of an intervention and observational nature, and the assignment to the study and control group was carried out using simple sampling. The K1 study group consisted of 50 women who were tested for food hypersensitivity in the IgG1-3 class, the remaining 50 were the control group K2. Patients from the K1 study group used an elimination diet for 6 months, based on individual results of food tests, and patients from the control group used the classic reduction diet at the same time (both diets under the control of a dietitian). All menus were designed within 1400-1600 kcal / day and had the same content of macronutrients. Based on the individually prepared

questionnaire, data on the coexistence of accompanying diseases and the occurrence of gastrointestinal complaints was collected - which was verified after 6 months of diet therapy. Anthropometric and biochemical tests were performed at the beginning of the study (W1), after 3 months (W2) and after 6 months (W3) of nutritional intervention. Serum TSH, fT4, fT3, α-TPO, α-TG, total cholesterol, HDL, LDL and triglycerides as well as glucose were determined at the initial visit W1, at the second visit W2 and at visit W3.

Results:

In the K1 study group, the reduction in body weight was statistically significantly greater than in the K2 control group ($p < 0.001$), similar to the BMI index ($p < 0.002$) and the percentage of body fat ($p = 0.026$). The amount of fat reduction was affected by the duration of obesity (the reduction was more effective in people with obesity lasting <5 years, $p = 0.010$), while the duration of Hashimoto's disease was not associated with a reduction in body fat. In the K1 study group, there was also a statistically significant decrease in TSH concentration ($p < 0.001$) and it was not associated with either the duration of obesity or the duration of Hashimoto's disease. In both groups fT3 and fT4 levels increased, but in the K1 study group this increase was significantly higher ($p < 0.001$). The decrease in anti-TPO ($p < 0.001$) and anti-TG ($p = 0.048$) was significantly greater in the K1 study group. It was found that the lipid profile did not show significant differences between the groups after the application of nutritional intervention, while the reduction in fasting glucose was significantly greater in the study group K1 ($p < 0.001$). A positive correlation was observed between the concentration of anti-TG antibodies and a change in body weight ($p = 0.001$) and a positive correlation between the difference in body fat content at W1 and W3 visit, and TSH concentration ($p = 0.004$). The decrease in fasting blood glucose was statistically significantly associated with a reduction in BMI ($p < 0.001$) and a decrease in TSH ($p < 0.002$) and with an increase in fT3 ($p < 0.002$) and fT4 ($p < 0.004$). The change in glycaemia was also statistically significantly associated with a decrease in anti-TPO antibody concentration ($p = 0.027$). In addition, a significantly higher percentage of patients was observed in the K1 study group with a reduction in gastrointestinal discomfort, i.e. flatulence, constipation, diarrhea, abdominal pain ($p < 0.001$).

Conclusions: Weight reduction in obese women with Hashimoto's disease was statistically significantly associated with a decrease in anti-TG antibody levels, and a decrease in body fat (%) in the body correlated with a decrease in TSH and an increase in fT3 and fT4. Weight reduction was also significantly associated with a decrease in fasting blood glucose, while

glucose was correlated positively with a decrease in TSH. It was shown that the decrease in anti-TPO antibody concentration was not statistically significantly associated with weight loss, but with the use of an elimination diet, which may prove significant for the course of treatment of Hashimoto's disease. Their reduction was also significantly associated with a decrease in fasting glucose, where no such correlation was observed in the case of anti-TG antibodies. The elimination diet resulted in statistically significantly greater weight reduction and better improvement of anthropometric, thyroid and fasting glucose parameters than the classic reduction diet. The elimination diet (based on IgG1-3 food hypersensitivity tests) in obese women with Hashimoto's disease can be an effective tool in the treatment of obesity and contribute to reducing gastrointestinal discomfort in these women.