The assessment of the influence of manual lymphatic drainage on biochemical parameters in people with improper weight. The description of chosen cases.



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INTRODUCTION

In recent years, several studies have been carried out indicating that the obesity can cause pathologic changes in the lymphatic system, which can impair its function. The research also proved that the dysfunctions of lymphatic system may influence the development of obesity, consequently restoring correct lymphatic functions can hinder the development of obesity. Manual lymphatic drainage (MLD), as a form of physiotherapy, aims at supporting the work of lymphatic system due to the increase of the lymph flow. Manual lymphatic drainage is usually used as a manual therapy in people after oncological surgeries, chemotherapy and radiotherapy. In recent years, there have been only a few studies showing an improvement of the lymphatic system function in patients with abnormal body weight after the use of MLD. The literature also reports about rare cases which suggests that not only the lymphatic system disorder can cause lymphedema, but may also lead to the increased risk of hypertension, atherosclerosis or insulin resistance.

AIM

Evaluation of the impact of manual lymphatic drainage on carbohydrate and lipid metabolism in the group of three chosen women.

MATERIALS AND METHODS

The patients were recruited from Poradnia Kardiologii i Chorób Wewnętrznych in Gdynia. The therapy of three women, in the age ranging from 30 to 59 years old, was presented. The patients were subjected to the therapy of lymphatic drainage of abdomen ten times (30 minutes, 2-3 times per week). There was also a blood test conductedbefore and after the therapy. The test included: glycated haemoglobin HbA1c, C-peptide, C reactive protein, lipid panel and blood glucose (point 0 and 120). The patients were given a health questionnaire. The obesity level was defined by the BMI (Body Mass Index) and WHR indicator (weight to hip ratio).

RESULTS

Patient nr 1 (CT): 59 years old, 27,5 kg/m2; overweight, average pressure 122/85 mm Hg
Patient nr 2 (NH): 30 years old, BMI 35.42 kg/m2; obesity class 2, average pressure 120/77 mm Hg
Patient nr 3 (CA): 49 years old, BMI 21,67 kg/m2; normal body weight, average pressure 121/74 mm Hg



	Patient 1 with overweight		Patient 2 with class ^o 2 obesity		Patient 3 with normal body weight	
PARAMETE R	before therapy	after therapy	before therapy	after therapy	before therapy	after therapy
HbA1C [%]	5.6	5.6	5.6	5.6	5.6	5.6
glucose[mg/d	91	95	105	105	97	94
C-peptide [ng/mL]	2.95	2.23	2.4	1.9	1.16	1.21
hsCRP [mg/L]	3.6	3	1.3	1.9	<1	2
cholesterol [mg/dL]	253	239	194	211	213	214
HDL-C [mg/dL]	51	47	57	55	67	66
LDL-C [mg/dL]	177	169	111	144	135	134
TG [mg/dL]	125	109	131	61	51	67

CONCLUSION

The therapy in overweight patient resulted in a decrease of: CRP, few elements of lipid panel, triglycerides, C- peptide. In the case of obese patient, there was an increase of: lipid panel and CRP. However, there was also a decrease in Cpeptide and triglycerides. In the case of the patient with proper BMI, the results were the most stable. The continuation of research is necessary to establish if manual lymphatic drainage may be helpful in the treatment of early phases of insulin resistance in obese people.

Fig. 1 Manual lymphatic drainage of the abdominal cavity and groin: (a) area above the navel (b) area below the navel (c) groin area.

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