

# SERUM HOMOCYSTEINE LEVEL DIFFERENCE IN ATHEROSCLEROTIC PATIENTS DEPENDING ON PRESENT OF TYPE 2 DIABETES MELLITUS

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**Introduction.** Homocysteine (Hcy) is a sulfhydryl-containing amino acid and an intermediate product in the normal biosynthesis of the amino acid methionine and cysteine [1]. For healthy individuals, the ideal range for the total concentration of Hcy in plasma is between 5 and 15  $\mu\text{mol/L}$ . Hcy level fluctuations are linked to a number of illnesses [2]. It is a stand-alone vascular disease risk factor [3]. Recent studies have increasingly been showing interactions between plasma Hcy levels and Type 2 Diabetes Mellitus (T2DM) and its vascular complications. However, research showing differences in plasma Hcy levels between individuals with diabetes and those without diabetes make the correlation with T2DM less compelling [4].

**Aim of the study.** To compare plasma Hcy levels in patients with atherosclerosis (AS) before and after vascularization depending on present of T2DM

**Materials and methods.** 89 patients with AS were examined at the Department of Purulent Surgery of "Grodno University Clinic". Average age of the examined patients was  $64 \pm 10.15$  years. The patients were divided into 2 groups. Group 1 consisted of 25 patients with only AS. Group 2 consisted of 64 patients with AS and T2DM. Among all patients, 83 were in Fontaine 4, 3 – in 3 and 3 – in 2b stage. The groups were comparable by gender, age, and distribution by stage of chronic arterial insufficiency of the lower limb. All patients gave informed consent to participate in the study. Fasting blood samples from the ulnar were collected from all the patients before the planned surgery, and 14 days after the surgery, 3 months and 12 months after surgery. Quantitative determination of Hcy levels in blood plasma was performed using the enzyme-linked immunosorbent assay. All the calculations are done using Microsoft Excel

**Results and discussion.** Average Hcy concentration in Group 1 – 4.84 (nmol/ml), in Group 2 – 5.04 (nmol/ml). According to the above values, there is a significant elevation of Serum Homocysteine concentration in Group 2 than Group 1 ( $p < 0.05$ ).

The dynamics of Hcy levels (nmol/ml) in postoperative period in 2 weeks, 3 months and 1 year after operation respectively was 4.84, 4.52, 4.02, 5.25 in Group 1 and 5.04, 4.83, 4.85, 5.63 in Group 2.

Decreasing of Hcy levels during first 3 months is observed, and this decreasing is more in Group 1. But after 3 months period Hcy levels increase again and in 1 year period are more than preoperatively. In all periods Hcy levels in Group 2 are higher than Group 1.

**Conclusion.** Hcy level is higher in AS patients when T2DM is present. According to our studies patients Hcy levels in both groups are initially decreased after surgery but again it getting increased in later postoperative period. For further studies, it is important to control Hcy level in plasma of postsurgical T2DM patients with medications (such as Folic Acid, vitamins group B etc.) to prevent recurrence of peripheral vascular occlusions.

#### ЛИТЕРАТУРА

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## EFFECT OF LAPAROSCOPIC CYSTECTOMY FOR OVARIAN ENDOMETRIOMA ON THE FERTILITY OF WOMEN OF DIFFERENT AGE CATEGORIES

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**Introduction.** Modern women prioritize their careers and financial independence choosing to postpone pregnancy until their late 30s. Endometriosis is one of the leading causes of infertility in women of reproductive age. Endometriosis is found in up to 25-50% of women with infertility and up to 50% of women who has endometriosis have infertility [1, 2]. Ovarian endometriomas are benign ovarian cysts that occurs in 17-44% of patients with endometriosis. Therefore, women with diagnosed endometriosis have a greater risk of infertility at late reproductive ages.