Conclusion. According to the recorded data, patients who got ectopic pregnancy are below 30 years and most of them have suffered from ectopic pregnancy in their 2nd pregnancy, mostly due to a complication of 1st pregnancy. As most of patients were young, resection of fallopian tube with end to end tubal anastomosis was performed to preserve the fertility.

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PROSPECTIVE STUDY OF COMPARISON OF PLASMA HOMOCYSTEINE AND ENDOTHELIN-1 LEVELS OF DIABETIC ATHEROSCLEROTIC PATIENTS AFTER OPEN SURGICAL VS ENDOVASCULAR REVASCULARIZATION IN BOTH PRE-OPERATIVE AND POST-OPERATIVE PHASES

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Introduction. Atherosclerosis is a multistage process that contributes to cardiovascular disease associated with high rates of morbidity and mortality worldwide. An estimated 6-7% of the world population are affected by Diabetes Mellitus (DM) and most deaths in this group are caused by atherosclerosis. Infact, DM accelerates the rate of development of atherosclerosis [1]. DM also increases the risk of lower-extremity amputation in atherosclerotic patients [2]. Among various modifiable or non-modifiable risk factors such as age, ethnicity, smoking, diet, exercise, therapy, treatment adherence etc. it becomes increasingly difficult to assess the course of treatment of these patients using lipid and glycaemic profiles alone. There is a need for reliable evaluation of prognosis that can be applied universally for patients undergoing vascular surgery treatment, as well as to compare the types of vascular surgery with the more favourable response. In recent years a few prognostic

markers have shown promise and among them are homocysteine (Hcy) and endothelin-1 (ET-1). Hcy and ET-1 have already been established as factors at play in the pathogenesis of diabetic atherosclerosis. Hcy is an amino acid which arises as an intermediate mainly in the metabolism between methionine and cysteine and is currently known to have toxic effects on endothelial cells causing injury which doubles the risk of cardiovascular disease [3][4]. Hcy can be elevated for non-atherosclerotic patients with folic acid, cobalamin deficiencies and in cases of renal impairment [3]. On the other hand, ET-1 is the most potent vasoconstrictor hence contributing to the hypertensive component and is also known to have a major role in atherogenesis [5]. Hcy and ET-1 both have positive associations in atherosclerosis and therefore a decrease in their plasma concentrations is linked to positive outcomes after treatment.

More than one biomarker was used in this study to ensure reliability by addressing the complexity in metabolic responses and molecular pathways in atherosclerosis. The plasma levels of Hcy and ET-1 were used to compare short-term and long-term prognosis in both open surgical and endovascular revascularisation.

Aim of the study. Examine differences in outcome in open surgical vs endovascular revascularization by comparing plasma Hcy and ET-1 levels in pre-operative and post-operative phases.

Materials and methods. Data of 43 patients suffering from moderate to severe chronic limb ischemia (Fontaine scale score of 2b, 3 and 4) between the years 2021-2023 were isolated from the Department of Purulent surgery of Grodno University clinic, Belarus out of which 38 patients were selected after removing outliers and after narrowing down to Fontaine 4 patients. These patients were divided into two groups based on the type of vascular surgery they underwent: Group 1, Endovascular surgical patients (25 patients; 15 males and 12 females; age range 51-80 years) and group 2, open surgical vascular patients (13 patients; 11 males and 2 females; age range 48 –78 years). Plasma Hcy and ET-1 levels were quantitatively determined using enzyme-linked immunosorbent assay. Measurements were taken pre-operatively (upon admission to the department) and then repeated thrice at 2 week, 3-month and 1-year periods after surgery respectively.

The average changes in plasma Hcy and ET-1 post-surgery between each time period were calculated for both groups 1 and 2. These changes were compared to the average Hcy and ET-1 of all patients measured before surgery which were considered as baseline values. The percentage changes were then calculated.

Statistical analysis was performed on Microsoft Excel.

Results and discussion. Group 1 (Endovascular) Hcy levels decreased slightly by –1.29% after 2 weeks and -15.39% after 3 months from baseline value but only change –2.1% after 1 year. Group 1 ET-1 levels rise 2 weeks after surgery by 1.31% but drop to –10.78% after 3 months and stay almost constant at –10.02% 1 year after surgery. The post 1 year Fontaine scale had decreased to 1 in 40% of the patients.

Group 2 (Open Surgical) Hcy levels decrease drastically by –13.38% 2 weeks after surgery, and by –17.92% 3 months after surgery but by 1 year has a dramatic increase from baseline value by 18.19%. Group 2 ET-1 levels decrease slightly by –

1.83% after 2 weeks, increase by 4.69% after 3 months and then decreases to -13.6%. The post 1 year Fontaine scale had decreased to 1 in 15.38% of the patients.

The aim of this study is to compare the surgical outcomes after open vascular and endovascular surgeries using Hcy and ET-1 as prognostic markers. Group 1 showed a greater initial decrease in Hcy in the initial 3 months compared to Group 2 but rises significantly after 1 year. This indicates that even though surgery may temporarily improve the patient's condition, it doesn't offer a curative option in atherosclerosis. ET-1 levels show an overall decrease after 1 year showing progressive outcomes, especially more in Group 2.

Conclusion. Overall group 1 (Endovascular) displays a more consistent decrease in Hcy and ET-1 helping us conclude that endovascular surgeries favour positive outcomes compared to open surgeries. Furthermore, surgery does not provide relief from ongoing pathogenesis as evident from rising Hcy and ET-1 levels within 1 year after surgery, so we suggest pharmacological therapy that targets ET-A receptor blockade and decrease in Hcy levels in these patients. Existing options for the former include ET-A receptor antagonists like Bosentan, Ambrisentan (both used in the United States) and Sitaxsentan (used in Canada and Europe). Hcy levels can be decreased with adequate vitamin supplementation.

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