(18,7%). Незадовільні результати мали місце у 9 (1,7%). Ревізійне ендопротезування кульшового суглоба нестандартна і суто індивідуальна операція в кожному конкретному випадку, що вимагає вироблення тактики диференційованого підходу до вибору методики проведення ревізійного ендопротезування та індивідуального підбору сучасних імплантів.

Ключові слова: кульшовий суглоб, ревізійне ендопротезування, ускладнення.

(18,7%) cases. Poor results occurred in 9 (1.7 %) cases. Revision hip arthroplastyis unusual and highly individual operation in each specific case that requires a differentiated approach to the choice of methodology for revision surgery and individual selection of modern implants.

Key words: hipjoint, revisionhip arthroplasty, complications.

V.Z. Netyazhenko, N.V. Netyazhenko, T.Y. Malchevska, O.M. Plienova
Bogomolets National Medical University

FEMALE GENDER AS AN ADDITIONAL RISK FACTOR FOR ATHEROTHROMBOTIC COMPLICATIONS OF IHD

E-mail: netyazhenko@bigmir.net

A comparative evaluation of the state of thrombocyte-plasma haemostasis was performed in patients of both sexes with acute and chronic forms of ischemic heart disease. It was found that women of all compared groups showed high platelet and procoagulant activity in comparison with men, despite the use of antiaggregant therapy and anticoagulants. MI in women is more unfavorable with increasing frequency of atrial fibrillation paroxysms and Lown III-IV extrasystolic arrhythmia (by 11.4% and 10.0%), cardiogenic shock by 6.8%, early postinfarction angina and pulmonary edema by 5 % compared to men. The delay in interventional intervention is associated with a 2.7-fold increase in mortality in women compared to men. A postmenopausal period of up to 5 years should be considered as an independent predictor of cardiovascular events. The postmenopausal period lasting less than 5 years in women with stable ischemic heart disease is accompanied by prothrombotic and procoagulant shifts of platelet-plasma hemostasis, even with antiplatelet treatment and is associated with an increase in the risk of adverse course of probable MI 7.1-fold (OR 7.1, 95% CI, 6-9.2, p = 0.046).

Key words: thrombotic complications, atherosclerosis, women, ischemia

Neglecting the data on the gender differences in the efficacy of cardiovascular therapy measures, the feminine for a long time has been mistakenly recognized protected by natural sex hormones having cardio-protective effect and not prone to cardiovascular events [1]. The detected differences in the efficacy of anti-platelet therapy for primary prevention of cardiovascular events and its inability to prevent myocardial infarction (MI) in women, as well as the adverse effect of the early invasive strategy in troponin-negative female patients on the non-ST segment elevation acute coronary syndrome (NSTEACS), have determined the necessity to search for the reasons of the latter [2,6,8]. Comparative assessment of the hemocoagulation system's parameters in patients of the both genders with ischemic heart disease (IHD), particularly its acute forms, would facilitate a balanced choice of anti-platelet treatment and its efficacy control, while determining the functional activity of the platelets would permit identification of the high-risk patients. The views on the features of the postmenopausal period and its sharply negative influence on the development, progression and occurrence of probable cardiovascular diseases (CVD) complications have changed. The deficiency of reproductive hormones as a result of menopause causes and accelerates the disorders of the endothelium structure and function, the development of insulin resistance, dyslipidemia and obesity, while the probability of CVD development, including ischemic heart disease, significantly increases, further equating, and sometimes exceeding such in men [3,5]. The necessity arises for an intensive study of estradiol and progesterone serum levels and their correlation with hemostasis indices, which has not been performed until now. Further research and development are required to take measures on hemostasis disorders correction aimed at reducing the level of IHD complications among female patients, which determined the relevance of the study performed.

The purpose of the study was to determine the gender features of the ischemic heart disease course and mechanisms for its destabilization in women with an assessment of plasma-platelet hemostasis, retrospective and prospective analysis of clinical and instrumental data, development of the prognostic models for probable complications in the postmenopausal period.

Materials and methods of the research. The work is based on the results of studying the clinical and pathogenetic features of the various IHD course forms among 866 patients. The retrospective part of the study includes 520 patients with myocardial infarction (MI) with the ST segment elevation (STEMI) 211 (40.6%) women and 309 (59.4%) men, the average age of 61.4 ± 5.7 years.

Exclusion criteria were age below 18 and over 75 years of age, uncontrolled hypertension, signs of severe heart failure III-IV functional class according to the New York Heart Association classification,

left ventricular ejection fraction less than 45%, acute ischemic and / or brain hemorrhage, diabetes mellitus type 1 and type 2 with a secondary need for insulin, severe chronic kidney and liver diseases, other severe concomitant diseases that are likely to reduce life expectancy over the next 12 months.

Depending on the gender, the patients were divided into the group of women (group I) and that of men (group II), comparable by age (68.3 ± 2.1 versus 62.7 ± 3.2 years). According to the main factors of the cardiovascular risk the groups were comparable. A combination of non-fatal re-MI and lethality was used as a combined endpoint (CEP). The groups of patients were formed, who were made percutaneous coronary intervention (PCI) with the culprit artery stenting (156 (30.0%) persons) within the term of > 2 <6 hours (n = 42 men, n = 38 women) and within the term of $> 6 <12$ hours (n = 36 men, n = 40 women) and thrombolytic therapy (TLT) (73 (14.0%) persons) - up to 4 hours (n = 14 men, n = 14 women) and within the term of $4 <6$ hours from the initial symptoms onset (n = 20 men, n = 20 women).

The group of patients with stable effort angina of I-II functional class (FC) included 40 women of the postmenopausal (PM) period. Based on the duration of the PM period, the patients were distributed into the groups: 20 (100.0%) women were included in each group (early PM (<5 years) and late PM (≥ 5 years). Estimation of estradiol and progesterone levels in the PM period was performed among patients with stable angina pectoris and STEMI.

The total of 65 female patients (mean age of 62.4 ± 2.3) on NSTEACS (non-ST segment elevation acute coronary syndrome) were divided into the groups of low, moderate and high risk of major adverse events development on the TIMI and GRACE scales. During the hospital period (an average of 21 ± 1.4 days) the development of the combined endpoint (CEP) was estimated, which included the all-cause mortality, development of myocardial infarction (MI) and angina.

The total of 105 patients (45 women and 60 men with an average age of 64 ± 6.8 years) with STEMI, which were effectively treated with thrombolysis within ≤ 6 hours after the onset of major symptoms, were distributed according to the TIMI prognostic scale to assess the mortality risk during 30 days following after the fibrinolytic therapy in the mortality risk group.

The following research methods were used in the study: general clinical, laboratory biochemical, coagulogical - thrombin time (TT), activated partial thromboplastin time (APTT), determination of fibrinogen content (FG), soluble fibrin monomer complexes (SFMC), determination of XIIa-dependent fibrinolysis (DF) time, the concentration of antithrombin III (AT III) and normalization ratio (NR), protein C, aggregometry with the assessment of the degree and rate of spontaneous and induced platelet aggregation with the addition of arachidonic acid (AA), ADP, adrenalin and collagen, enzymic to determine the lipid profile, enzyme-immunoassay to determine hormone levels in serum; instrumental - electrocardiography, echocardiography, computer angiography of coronary arteries; statistical and mathematical analysis of the obtained data.

Results of the study and their discussion. Gender characteristics of the STEMI course and the immediate consequences according to the retrospective study data. Women, compared to men, were on average 5.6 years (p <0.05) older; female gender was associated with a significant increase in the incidence of atrium fibrillation paroxysms by 11.4%, Lown III-IV extrasystolic arrhythmia by 10%, early postinfarction angina by 5%, pulmonary edema by 4.9%, and cardiogenic shock by 6.8%. A higher incidence of complications in female patients arose in the treatment with full doses of anticoagulants, statins, acetylsalicylic acid (ASA) and clopidogrel, and the reperfusion therapy was performed to over 70% of patients, with percutaneous coronary intervention (PCI) implemented in 57.3% of cases. The course of ACS in patients who had PCI performed more than 6 hours after the onset of symptoms, compared to the group with a PCI performed within the 6 hours period, was more unfavorable for both genders. The pronounced gender difference with the "negative" superiority of women against men was detected only in the group with remote PCI implementation with such indications as acute left ventricular failure (ALVF) class II-IV according to Killip (58.3% vs. 80.0%), disorders of the rhythm and conductivity (36.1%) MI (38.9% vs. 62.5%) and mortality (11.15% vs. 30.0%); all making p <0.05. Long-term delay in performing PCI for more than 6 hours in women was associated with a 2.3-fold increase in the ALVF frequency (p <0.001), disorders of rhythm and conductivity by 1.6 times (p <0.05), MI relapses by 3.9 times (p <0.001) compared to women who were performed PCI within the interval of $> 2 <6$ hours.

Thrombolytic therapy (TLT) performed within the period up to 4 hours was accompanied with the risk of bleeding increased in women by 5 times in comparison to men. In 22.6% of men in the early TLT group, a fatal outcome developed, while in women it did not have any place at all (all making p <0.05). The gender difference was not found in the group with the remote TLT ($> 4 <6$ hours). It is important that the incidence of MI (p <0.05) only increased in women who were performed TLT within the period after 4 to 6 hours.

The results of the retrospective part of the work confirmed that the female gender is an additional risk factor for the development of an unfavorable ACS course with the onset of thrombotic complications, despite the intended full treatment, including anti-platelet therapy. In view of the latter, it was expedient to carry out further studies with an analysis of the platelet-plasma hemostasis condition in female patients with IHD, particularly its acute and stable forms; the shift of hemostasis could have been the basis of these "negative" results. The state of platelet-plasma hemostasis in women with a stable IHD form with different duration of the postmenopausal period. When comparing the features of changes in the state of platelet hemostasis against the background of anti-platelet therapy in women with chronic IHD in different periods of PM, both in rest and with the addition of inducers, in the early PM, in women the platelet activity was reliably higher in comparison to the late PM group. Thus, the median of the spontaneous platelet aggregation degree was 1.56 with the interquartile range (IQR) of 1.04-3.44 and 0.64 with IQR 0.61 to 1.30, respectively ($p < 0.01$). The median degree of induced platelet aggregation was significantly higher in the group with the disease duration of up to 5 years with three of the four inducers used and indicated a reduced sensitivity to ASA (with the addition of AA and ADP) and clopidogrel (with ADP added). Thus, the degree of aggregation with AA in the group of women in the early PM period was 2.12% with values of the 25th and 75th percentile 1.33-3.28 versus 0.71% (0.65-1.04) in the late PM group ($p < 0.05$). In the early PM group, the IQR median was 2.42% (1.95-3.34) ($p < 0.01$) when used as an inducer of ADP, while in the late PM group this figure was 0.8% (0.74-2.1). The percentage increase in the degree of platelets aggregation with adding AA compared to the spontaneous aggregation made 35.9% in the group of conditionally early PM that exceeds the permissible barrier in the ASA treatment [4,9]. Our data on the increased platelet readiness, despite the prolonged and systematic use of anti-platelet drugs, permitted to identify women in the early PM period as a separate group of probable thrombotic complications risk.

Pro-coagulatory shifts of plasma hemostasis parameters were detected in the early PM period. The duration median of activated partial thromboplastin time (APTT) in the early PM group was 28 seconds with IQR 26-36 and was lower by 39.2% compared to the late PM group ($p < 0.05$). The value of the thromboplastin time (TT) duration was also lower in women in the PM period up to 5 years and amounted to 26 s with IQR 21-29, while in women with PM duration over 5 years, the mean TT value was 38s, IQR making 31-40. The mean values of the content of antithrombin III (AT III) in the group of women in the early PM were 76% with IQR 71-94, while in the comparable group they were 88% with IQR 80-95 ($p < 0.05$). The normalization ratio of the protein C in the group with the PM duration of up to 5 years averaged 0.52 (0.42-0.9), while that in the late PM group was 0.9 (0.72-1.1), (all making $p < 0.05$).

The duration of XIIa blood coagulation factor (XIIa BCF) in women of the early PM group was reliably higher by 2.3 times and amounted to an average of 14 min (6-16), while in the conditionally late PM group it was 6 min (4-7) ($p < 0, 05$), which indicates to the inhibition of the fibrinolysis contact phase. The compared groups of patients did not have a reliable difference in the fibrinogen content and SFMC ($p > 0.05$).

The severity of pro-thrombotic and pro-coagulatory changes in hemostasis systems of women in the PM period with stable exertional angina directly depends on the content of blood serum estradiol, progesterone and their ratio. In women in the PM period, correlation coefficients between the estradiol content and the degree of spontaneous and induced platelet aggregation with AA and ADP and the duration of XIIa BCF, indicated the negative correlation dependence of high intensity and the positive correlation dependence with the duration of APTT, TT, the concentration of AT III, and the normalization ratio of protein C.

The content of progesterone positively correlated with high degree with induced platelet aggregation and negatively did with the duration of APTT, TT and protein C (all making $p < 0.05$). The finding of this part of the study is the first-ever determination of estradiol-progesterone ratio (EPR), which in the high degree inversely correlated with platelet aggregation induced by the both inducers and with the duration of XIIa BCF, and positively correlated with APTT and TT (all making $p < 0,05$). Reliably high correlation was determined between estradiol and APTT ($r = 0.62 *$, $p < 0.05$).

Studying the functional activity of platelets and the plasma level of hemostasis in female patients with STEMI stratified by the TIMI and GRACE scales. The distribution of the risk groups of patients with STEMI showed an increase in the degree of platelet aggregation with a risk of mortality on the TIMI and GRACE scales in moderate to high risk groups, at the estimation of both the spontaneous and the induced platelet aggregation. Thus, despite the full anti-thrombotic therapy assigned, at the analysis of spontaneous aggregation, the difference in the moderate risk group was found by 12.1% and 11.3%, and in the high-risk group - by 22.1 and 23.7%, respectively, according to the TIMI and GRACE prognostic models, in comparison to the low risk group ($p < 0.001$). Adding as an inducer AA, ADP, collagen and

adrenaline, the growth dependence similar to spontaneous aggregation was revealed. The obtained results by the criteria for estimating the clinical response to antiplatelet drugs with the use of ADP [9] showed the benefit of clopidogrel insensitivity in high-risk groups by the TIMI and GRACE scales among women with STEMI. The calculated correlation coefficients indicated a high correlative relationship between the GRACE and AA levels (r = 0.56; p <0.001) and ADP-induced aggregations (r = 0.6GUM1; p <0.01) and a moderate correlation with adrenaline-induced aggregation (r = 0.48). Between the TIMI scale and ADP-induced aggregation, a moderate correlation was determined (r = 0,32; p <0,05).

A prospective study of female patients with STEMI revealed significant changes in the plasma coagulation hemostasis in high-risk groups with unfavorable course according to the both prognostic models. On treatment with direct anticoagulants assigned and the expected hypocoagulation, the reduction of the APTT and TT duration by 15.0% and 9.0% in the high-risk groups compared to the low and moderate risk groups. It should be noted that the hypercoagulative condition of the hemostasis system was detected on treatment with sodium fondaparinux and sodium enoxaparin. Fibrinogen, exceeding the upper threshold level, was the highest in high-risk groups (4.1 ± 0.55 g / l by the TIMI scale and 4.6 ± 0.33 g / l by the GRACE scale), which again emphasizes its significance in detection of pro-thrombotic states.

Depletion of natural anticoagulants (protein C and AT III) was observed in groups of women with high risk of ACS unfavorable course according to the both scales, with a more reliable decrease by GRACE scale. In this case, activity of AT III was lower than the lower reference limit (79 ± 1.3% by the TIMI scale and 72 ± 0.9% by the scale GRACE). While the concentration of SFMC remained virtually unchanged, in women with STEMI increasing risk, the duration of XIIa BCF was prolonged by the both prognostic models. The tendency to suppress the fibrinolytic system was more pronounced in the high risk group by GRACE scale compared to that by TIMI scale (8.6 ± 0.55 min vs. 7.7 ± 0.2 min, respectively).

The multiple factor regression analysis of this study revealed that the OR for the development of all cause mortality, myocardial infarction and angina increases with the following threshold values: APTT <50 s – by 2.2 times, TT <21 s – by 1.3 times, AT III <85 % - by 2.2 times and protein C <0.72 NA – by 1.7 times. An independent predictor was also fibrinogen, which concentration of > 3.9 g / l increased CEP OR by 3.1 times. The impact of the XIIa BCF duration and the SFMC concentration was not reliably significant (p> 0.05). Comparative assessment of platelet-plasma hemostasis parameters in women and men and their correlation with the results of STEMI clinical course. Despite the similar treatment in each group of male and female TLT patients, anticoagulants and anti-platelet drugs, the pronounced increase in platelet activity with the mortality risk according to TIMI scale was only observed in women. The aggregation activity increase was accompanied by the pronounced decrease of the anti-platelet ASA effect in women of the high risk group, which was manifested as the aggregation level increase by 34.9% compared to the spontaneous aggregation with the addition of AA and clopidogrel with the increase of functional activity by 57.8% in the low-risk group, by 73.7% in the moderate risk group and by 66.9% in the high-risk group.

Significant increase in collagen-induced platelet aggregation in women with a high risk by TIMI in comparison to the previous groups favored to the dramatic enhancement of inter-platelet interactions. Collagen-induced aggregation, as well as adrenaline-induced one, did not exceed the reference values in all of the three groups, but in the high-risk group it was significantly higher.

It should be emphasized that for the patients of both genders with STEMI, who received TLT, during the study of platelet functional activity, the threshold values of the residual platelet reactivity (RPR) to ADP and AA were established; with their increase the frequency of thrombotic complications and the all-cause mortality (CEP) increased. The highest OR of the mortality CEP development risk with the smallest range of 95% CI was determined for the differentiating threshold value of RPR to AA by 1.33 RU (OR 4.6; 95% CI -3.3-15.4; p <0.001) and to ADP by 1.78 RU (OR 5.4; 95% CI 4.7-13.3, p <0.001). The Kaplan-Mayer survival curves for high platelet reactivity to AA (> 1.33 RU) and ADP (> 1.78 RU) differed by log-rank test as p = 0.042 and p = 0.034, respectively.

Analysis of plasma hemostasis parameters in patients of both genders against the background of drug-induced hypocoagulation (therapy with fondaparinux sodium) indicated a pronounced thrombophilic condition of blood plasma in women of the high risk according to TIMI, which was manifested by an increase in the internal coagulation mechanism (APTT reduction to 51.68 ± 0.1 s versus 65, 1 ± 0.4 s and TT reduction to 20.1 ± 0.1 s versus 23.4 ± 0.4 s, respectively), increase in the level of the thrombinemia marker (SFMC up to 5.2 ± 0.2 × 10-2 g / l versus 4,4 ± 0,04 x 10-2 g / l), a steady tendency to decrease in the activity of the natural anticoagulants system (AT III to 55,6 ± 0,3% versus 66,5 ± 0,2% and that of protein C to 0,51 ± 0.7 NS versus 0.61 ± 0.03 NA) and the significant depression

of fibrinolysis was revealed (according to the duration data of XIIa BCF up to 64 ± 0.6 versus 36.8 ± 0.4 min), compared to men of the same group (all making p <0.001).

An important result of our work was not only the revealed difference in the growth of pro-thrombotic and pro-coagulatory changes in the hemostasis parameters, but also particularly in the frequency of the thrombotic complications occurrence among the women of moderate and high risk by the TIMI scale. During the hospital period, the group of moderate-risk women differed from that of men in a higher incidence of second-class acute left ventricular failure (ALVF) (60.0% vs. 9.1%) and the early post-infarction angina (60.0% vs. 13.6%) (all making p <0.005). In the high-risk group, early post- infarction angina, non-fatal re-MI (p <0.01) and cardiogenic shock (p <0.001) were observed more than 4 times as frequently, whereas the second-class ALVF and pulmonary edema predominated by 6.5 and 16.2 times in women compared to men (all making p <0.001). Differences were also observed in the incidence of lethality that in women with high-risk according to TIMI scale reached 40.0%, while in men it made only 8.8% (p <0.01).

Prognostic value of the reproductive hormones content and the correlation of platelet-plasma hemostasis disorders in women of the PM period with STEMI. The survival of female patients in the PM period was influenced by the serum estradiol content, the best value of which with a high sensitivity of 88.4% and a specificity of 89.2% was below 45.14 pg / ml, with which the course of STEMI was complicated by major adverse events (OR 3.2; 95% CI 0.84-5.2, p <0.001 for the single-factor analysis; OR 1.9; 95% CI 0.96-2.4; p <0.04 for multivariant analysis). While the level of progesterone did not have a reliable significance during the Cox multivariant regression analysis, we have proved the feasibility of using the EPS index with the value below 12,117 pg / ng (sensitivity 91.5%, specificity 76.4%). The course of STEMI was worse in patients with a specified difference value (OR 5.2, 95% CI 0.87-6.4, p <0.001 for the single-factor analysis; OR 1.44; 95% CI 0.87-1.99, p <0.04 for multivariant analysis).

Multivariate regression analysis of this study revealed independent predictors of RPR increase to AA and ADP above the established threshold values, which included, apart from the above mentioned estradiol and EPS, progesterone levels> 5 ng / ml, duration of arterial hypertension> 5 years and PM <5 years, the presence of type 2 diabetes and female gender (all p <0.05). The OR of RPR increase to AA> 1.33 RU and ADP> 1.78 RU on the refresher course of anti-platelet therapy in STEMI patients with each independent predictor.

Reduction in the estradiol content of less than 45.14 pg / ml in blood serum were accompanied by pronounced pro-thrombogenic changes, which were manifested by reducing the duration of APTT (<50c) and TT (<45c) in 61.3% and 44.7% of cases, respectively, by increasing fibrinogen concentration (> 4g / l) in 51.7% of cases, a decrease in the AT III activity of (<80.0%) in 62.4% and protein C (<0.7 normalization ratio) in 42.1%, increase of the SFMC concentration (> 4 x 10-2 g / l) in 37.5% and suppression of XIIa BCF (> 12 min) in 41.0% of cases. Patients with the total progesterone content of > 5 ng / ml in 56.5% of cases had hyperfibrinogenemia and in 68.2% had a decrease in the AT III concentration in 68.2% of patients. The EPS value below 12,117 pg / ng was associated with a decrease in the protein C activity in 47.4%, with the 49.2% increase in the SFMC concentration and suppression of XIIa BCF in 54.3% of patients.

When using the Cox model regression analysis, women aged under 55 had a more favorable prognosis for changes in coagulation-plasma hemostasis. The probability of thrombophilic shifts increased with the age of > 55 years (OR 0.32; 95% CI 0.11-0.66, p = 0.03). The duration of the postmenopausal period also had a reliable significance according to the data of multivariant analysis (OR 1.66; CI 95% 1.15-2.22; p = 0.048). The levels of estradiol, progesterone and EPS simultaneously affected the cumulative thrombophilic changes in plasma hemostasis.

Conclusions

1. MI in women is characterized by an increase in the incidence of atrium fibrillation paroxysms and extrasystolic arrhythmia of Lown III-IV (by 11.4% and 10.0% respectively), cardiogenic shock by 6.8%, early post-infarction angina and pulmonary edema (by 5%) in comparison to men. Delay in performing interventions is associated with an increase in women's mortality by 2.7 times compared to men. Implementing thrombolysis within 4 hours from the onset of symptoms among women is associated with an increase in the risk of bleeding by 5 times compared to men and a relapse of MI by 5.6 times compared to women within the time interval of more than 4 hours.

2. Postmenopausal period up to 5 years should be considered as an independent predictor of cardiovascular events. Postmenopausal period of less than 5 years in women with stable IHD is accompanied by pro-thrombotic and pro-coagulative changes in platelet-plasma hematostasis, even under antiplatelet therapy, and is associated with the increased risk of unfavorable course of probable MI by 7,1 times (OR 7,1; 95% CI 5,6-9,2; p = 0,046).

References

1. Aradi D, Komócsi A, Price MJ. For the Tailored Antiplatelet Treatment Study Collaboration. Efficacy and safety of intensified antiplatelet therapy on the basis of platelet reactivity testing in patients after percutaneous coronary intervention: systematic review and meta- analysis. Int J Cardiol ; 2013;167:2140–8.
2. Breet NJ, van Werkum JW, Bouman HJ. Comparison of platelet function tests in predicting clinical outcome in patients undergoing coronary stent implantation. JAMA ; 2010; 303:754–62.
3. Chirumamilla AP, Maehara A, Mintz GS., High platelet reactivity on clopidogrel therapy correlates with increased coronary atherosclerosis and calcification: a volumetric intravascular ultrasound study. J Am Coll Cardiol Img ; 2012; 5:540–9.
4. Harrison P, Mackie I, Mumford A, Briggs C, Liesner R, Winter M, Machin S. Guidelines for the Laboratory Investigation of Heritable Disorders of Platelet Function British Committee for Standards in Haematology. British Society for Haematology; 2011; 4: 47-84.
5. Levine GN, Bates ER, Blankenship JC. ACCF/AHA/ SCAI guideline for percutaneous coronary intervention: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Society for Cardiovascular Angiography and Interventions. J Am Coll Cardiol; 2011; 58:e44–122.
6. Price MJ, Berger PB, Teirstein PS. for the GRAVITAS Investigators. Standard- vs high-dose clopidogrel based on platelet function testing after percutaneous coronary intervention: the GRAVITAS randomized trial. JAMA ; 2011; 305:1097–105.
7. Steg PG, James SK, Atar D, Badano LP, Lundqvist CB, Borger MA, Fox KA. ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. European heart journal; 2012; 33(20):2569-2619.
8. Stone GW, Witzenbichler B, Weisz G. for the ADAPT-DES Investigators. Platelet reactivity and clinical outcomes after coronary artery implantation of drug-eluting stents (ADAPT-DES): a prospective multicentre registry study. Lancet; 2013; 382:614–23.
9. Tantry US, Bonello L, Aradi D, Price MJ, Jeong YH, Angiolillo DJ, Gurbel PA. Consensus and update on the definition of on-treatment platelet reactivity to adenosine diphosphate associated with ischemia and bleeding. Journal of the American College of Cardiology; 2013; 62(24), 2261-2273.

Реферати

ЖІНОЧА СТАТЬ ЯК ДОДАТКОВИЙ ФАКТОР РИЗИКУ АТЕРОТРОМБОТИЧНИХ УСКЛАДНЕНЬ ПЕРЕБІГУ ІХС
Нетяженко В.З., Нетяженко Н.В., Мальчевська Т.Й., Пленова А.Н.

Проводили порівняльну оцінку стану тромбоцитарно-плазмового гемостазу у пацієнтів обох статей з гострими і хронічними формами ІХС. Встановлено, що у жінок всіх порівнюваних груп виявлені висока тромбоцитарна і прокоагулянтна активність в порівнянні з чоловіками, не дивлячись на застосовувану терапію антиагрегантами і антикоагулянтами. ІМ у жінок відрізняється більш несприятливим перебігом зі збільшенням частоти парок-сизмів фібриляції передсердь і екстрасистолічної аритмії Lown III-IV (на 11,4% і на 10,0%), кардіогенного шоку на 6,8%, ранньої постінфарктної стенокардії і набряку легенів на 5 % в порівнянні з чоловіками. Затримка у виконанні ін-тервенційного втручання асоціюється зі зростанням деталь-ності у жінок в порівнянні з чоловіками в 2,7 рази. Період постменопаузи тривалістю до 5 років слід розглядати як незалежний предиктор розвитку серцево-судинних подій. Постменопаузі тривалістю менше 5 років у жінок зі стабіль-ною ІХС супроводжується протромботичні і прокоагу-лянтного зрушеннями тромбоцитарно-плазмового гемостазу, навіть при антитромбоцитарної лікування і асоціюється зі зростанням ризику несприятливого перебігу ймовірного ІМ в 7,1 рази (ЗОШ 7,1; 95% ДІ 5, 6-9,2; p = 0,046).

Ключові слова: тромботичні ускладнення, атеросклероз, жінки, ішемія.

Стаття надійшла 9.05.18р.

ЖЕНСКИЙ ПОЛ, КАК ДОПОЛНИТЕЛЬНЫЙ ФАКТОР РИСКА АТЕРОТРОМБОТИЧЕСКИХ ОСЛОЖНЕНИЙ ТЕЧЕНИЯ ИБС
Нетяженко В.З., Нетяженко Н.В., Мальчевская Т.Й., Пленова А.Н.

Проводили сравнительную оценку состояния тромбоцитарно-плазменного гемостаза у пациентов обоих полов с острыми и хроническими формами ИБС. Установлено, что у женщин всех сравниваемых групп выявлены высокая тромбоцитарная и прокоагулянтная активность в сравнении с мужчинами, несмотря на применяемую терапию антиагрегантами и антикоагулянтами. ИМ у женщин отличается более неблагоприятным течением с увеличением частоты пароксизмов фибрилляции предсердий и экстрасистолической аритмии Lown III-IV (на 11,4% и на 10,0%), кардиогенного шока на 6,8%, ранней постинфарктной стенокардии и отека легких на 5 % по сравнению с мужчинами. Задержка в выполнении интервенционного вмешательства ассоциируется с ростом летальности у женщин по сравнению с мужчинами в 2,7 раза. Период постменопаузы продолжительностью до 5 лет следует рассматривать как независимый предиктор развития сердечно-сосудистых событий. Постменопаузальный период продолжительностью менее 5 лет у женщин со стабильной ИБС сопровождается протромботические и прокоагулянтного сдвигами тромбоцитарно-плазменного гемостаза, даже при антитромбоцитарной лечения и ассоциируется с возрастанием риска неблагоприятного течения вероятного ИМ в 7,1 раза (ОШ 7,1; 95% ДИ 5,6-9,2; p = 0,046).

Ключевые слова: тромботические осложнения, атеросклероз, женщины, ишемия.

Рецензент Шепітько В.І.