Zabashta V. F., Fedak B. S. Analysis of indicators of time spent by emergency medical service team in acute coronary syndrome with elevation of *st* segment at the stage of direct stay on call. Journal of Education, Health and Sport. 2021;11(2):182-191. eISSN 2391-8306. DOI http://dx.doi.org/10.12775/JEHS.2021.11.02.018
https://apcz.umk.pl/czasopisma/index.php/JEHS/article/view/JEHS.2021.11.02.018
https://zenodo.org/record/4876312

The journal has had 5 points in Ministry of Science and Higher Education parametric evaluation. § 8. 2) and § 12. 1. 2) 22.02.2019.

Received: 11.01.2021. Revised: 10.02.2021. Accepted: 26.02.2021.

ANALYSIS OF INDICATORS OF TIME SPENT BY EMERGENCY MEDICAL SERVICE TEAM IN ACUTE CORONARY SYNDROME WITH ELEVATION OF *ST* SEGMENT AT THE STAGE OF DIRECT STAY ON CALL

V. F. Zabashta[1], B. S. Fedak[2]

[1]Municipal Center for Emergency Care and Disaster Medicine, Kharkiv, Ukraine
[2]Kharkiv Medical Academy of Postgraduate Education, Ukraine

Zabashta V. F.: ORCID: https://orcid.org/0000-0001-9105-2233
Fedak B. S.: ORCID: http://orcid.org/0000-0003-2898-2141

Abstract

Urgency. The period of a patient's hospitalization from the beginning of the disease has an important role in the provision of medical care. According to the Unified Clinical Protocol for the provision of medical care to acute coronary syndrome (ACS) patients, the latter must be hospitalized to an expert healthcare center in 90-120 minutes. That is why the main areas of pre-hospital care include the rapid recognition of acute myocardial infarction (AMI), stabilization of the patient's condition and his rapid transportation to the appropriate medical institution. The time from the appearance of the first symptoms of a heart attack to the arrival of the patient in the admission department of the hospital is an important factor influencing the course of AMI in further treatment, so to reduce the loss of time at this stage is important. **The aim of the study** was to analyze the time spent on the implementation of the protocol of assistance in AMI with the rise of the *ST* segment at direct stay of the emergency team on call. **Materials and methods.** A questionnaire survey of 85 emergency physicians working in Kharkiv was conducted. System approach, analytical, sociological

(questionnaire), computer data processing and statistical methods were used. **Results and discussion.** The time spent on the implementation of each item of the protocol of medical care in ACS with elevation of *ST* segment by emergency teams directly on call have been analysed and several important patterns were identified. It has been revealed that according to some indicators of time, individual teams differed by 5-10 times. An emergency physician job seniority turned out to be an important factor. The general trend was the lowest time spent on individual tasks by doctors who had an average length of service in the ambulance (10 - 20 years), slightly higher - by doctors who had the longest work experience (over 20 years), and the largest - in doctors with the shortest work experience (up to 10 years). The differences between the senior and middle groups were less significant than between the junior and middle groups. **Conclusions.** The results obtained indicate significant variability in the implementation of protocol items in different emergency teams. A longer time to perform protocol items in the group with long job seniority may be related to the doctors' age perculiarities (the average age is 57 y.o., with the presence of people over 70 y.o.). The longest execution time is in the group with the shortest experience in the emergency medical service. This naturally reflects the lack of experience and a greater number of diagnostic and treatment errors.

Key words: acute myocardial infarction; actions of the emergency medical service team; time on call.

Introduction. Cardiovascular disease (CVD) is a global health burden with a high economic cost to health system and society as a whole. About 10-12% of patients die from acute coronary syndrome (ACS), 20% of patients require constant supervision, and only 20-25% of people who have suffered a heart attack can return to work [1, 2].

An important role in the provision of medical care is played by the period of hospitalization of patients from the beginning of the disease. According to the Unified Clinical Protocol for the provision of medical care to patients with ACS, the patients should be hospitalized for 90-120 minutes in a specialized hospital [3]. That is why during the examination and diagnosis of patients with suspected acute myocardial infarction (AMI) the task of emergency medical service team (EMST) is to save as much time as possible in the "window of therapeutic possibilities".

Objective: to analyze the time spent on the implementation of the items of the protocol of assistance in AMI with the rise of the *ST* segment during direct stay of EMST on call.

Materials and methods. A questionnaire survey of 85 emergency physicians working in Kharkiv (Ukraine) was conducted. The questionnaire consists of a passport details and 37 open-ended questions, ranked by their direction: collecting medical history, examination and physical examination, assessment of the patient's cardiovascular and respiratory system, instrumental examination, treatment.

All the respondents were divided into three groups depending on their job seniority in EMST. The first group (G1) included doctors with the shortest length of service (up to 10 years), the second group (G2) included doctors with average length of service (10 - 20 years) , the third group (G3) includes doctors who had the longest work experience (over 20 years). To assess the results of questionnaires between groups, we compared the samples by gender.

System approach, analytical, sociological (questionnaire), computer data processing and statistical methods were used.

Statistical analysis of the results was performed using the program "Statistica v 8.0" (Stat Soft Inc., USA). In order to check the relationship between qualitative characteristics, Pearson's criterion χ^2 was used. The results were considered significant at a significance level of $p < 0.05$.

Results and discussions. The main task of pre-hospital care is rapid recognition of AMI, stabilization of the patient's condition and rapid transportation of the latter to the appropriate medical institution. The time from heart attack first symptoms appearance to the arrival of the patient in the admission department of the hospital is one of the significant factors influencing the course of AMI further treatment, so to reduce time loss at this stage is extremely important [1, 2].

We analyzed time spent on the implementation of each item of the protocol of medical care in ACS with elevation of the *ST* segment by EMSTs directly on call and several important patterns were identified (Table 1).

Some time indicators differ in different EMSTs by 5-10 times and job seniority turned out to be an important factor in this.

Thus, for the indicator "Set the exact time from the onset of chest pain and its duration", the average execution time directly on call in group G1 was 15.1 ± 14.8 sec, in group G2 - 7.3 ± 4.1 sec., in group G3 - 11.3 ± 9.0 sec., while the level of statistical significance when comparing the indicators of groups G1 and G2 was $p = 0.026$, when comparing groups G1 and G3 $p = 0.695$, and when comparing groups G2 and G3 $p = 0.032$.

Table 1

Distribution of time for execution of points of the protocol by EMSTs at ACS with elevation of *ST* segment directly on a call depending on doctor's job seniority, sec

Items of the protocol	Job seniority to 10 years, n=32			Job seniority 10-20 years, n=20			Job seniority over 20 years, n=33		
	M±m	Me	Q_{25}-Q_{75}	M±m	Me	Q_{25}-Q_{75}	M±m	Me	Q_{25}-Q_{75}
1	2	3	4	5	6	7	8	9	10
Set the exact time from the onset of chest pain and its duration	15.1 ± 14.8	10.0	5.0-20.0	7.3 ± 4.1	5.0	5.0–10.0	11.3 ± 9.0	10.0	5.0–0.0
To establish the nature of pain, its localization and irradiation	15.2 ± 13.5	10.0	5.0-25.0	8.6 ± 5.6	5.0	5.0–10.0	14.2 ± 14.3	10.0	5.0-15.0
Determine if there was an attempt to relieve pain with nitroglycerin	8.7 ± 6.7	5.0	5.0–10.0	5.6 ± 2.1	5.0	5.0–5.0	8.1 ± 5.2	5.0	5.0–0.0
To establish under what conditions there is a pain - whether it is connected with physical, psychoemotional loading	15,3 ± 16.1	10.0	5.0–17.5	7.6 ± 4.1	5.0	5.0–10.0	15.5 ± 16.2	10.0	5.0–5.0
Find out if there were attacks of pain or suffocation while walking, or if you were forced to stop, their duration in minutes. Were these attacks relieved by nitroglycerin	16.6 ± 14.7	10.0	5.0–25.0	8.0 ± 4.4	5.0	5.0–10.0	17.2 ± 16.0	10.0	7.0–20.0
Is this attack of pain or suffocation similar to the sensations that occurred earlier during exercise in the localization and nature	12.5 ± 15.6	8.5	5.0–12.5	6.4 ± 2.3	5.0	5.0–8.5	11.4 ± 7.5	10.0	5.0–20.0
Has the pain got worse and more frequent lately? It is desirable to indicate whether the load tolerance has changed or the need for nitrates has increased by	16.9 ± 19.3	10.0	5.0–20.0	7.9 ± 3.7	5.0	5.0–10.0	17.3 ± 17.8	10.0	5.0–20.0
Determine which medications the patient is taking daily	20.9 ± 15.4	20.0	10.0–30.0	12.8 ± 8.1	11.5	7.5–15.0	17.8 ± 10.3	15.0	10.0–20.0
Find out what medications the patient took before the arrival of the EMST	16.9 ±19.1	10.0	5.0–20.0	7.8 ± 4.4	5.0	5.0–10.0	16.4 ± 16.3	10.0	7.0–15.0
Find out the risk factors for cardiovascular disease. Detect a history of other comorbidities	48.8 ± 34.3	30.0	30.0–60.0	24.1 ± 20.4	18.5	12.5–30.0	57.7 ± 47.6	40.0	20.0–60.0
Collect a general history of allergies and determine whether there are allergic reactions to the drug	20.6 ± 16.7	15.0	10.0–25.0	24.3 ± 65.2	10.0	5.0–15.0	33.5 ± 49.0	15.0	10.0–30.0
Assessment of general condition and vital functions: consciousness, respiration, blood circulation according to the ABCDE algorithm	34.6 ± 47.0	10.0	10.0–60.0	15.2 ± 16.1	10.0	10.0–10.0	38.7 ± 124.3	10.0	10.0–13.0

1	2	3	4	5	6	7	8	9	10
According to the indications to eliminate the violation of vital functions of the body - respiration, blood circulation	272.2 ± 366.3	120.0	25.0-300.0 120.0	125.7 ± 267.7	42.5	10.0–105.0	178.6 ± 385.8	45.0	10.0–120.0
The color of the skin, humidity, swelling of the jugular veins	12.6 ± 13.9	10.0	5.0–12.5	6.3 ± 3.9	5.0	5.0–5.0	9.7 ± 10.0	7.00	5.0–10.0
Blood pressure measurement in both arms	83.9 ± 72.3	60.0	35.0–120.0	56.5 ± 38.9	55.0	20.0–75.0	108.4 ± 128.8	60.0	60.0–120.0
Percussion of the heart: pay attention to the presence of an increase in the limits of cardiac dullness	80.5 ± 84.6	60.0	27.5–120.0	32.3 ± 21.8	30.0	10.0–60.0	42.7 ± 31.8	30.0	20.0–60.0
Palpation of the heart: estimate the apical shock and its location	32.9 ± 22.8	30.0	12.5–60.0	13.6 ± 12.9	10.0	5.0–15.0	30.1 ± 22.7	20.0	10.0-60.0
Auscultation of the heart and blood vessels: assess the tone and presence of noise, the presence of III heart tone or IV heart tone; heart rate	74.2 ± 95.7	30.0	25.0–60.0	25.8 ± 19.2	22.5	10.0–35.0	52.9 ± 35.3	60.0	30.0–60.0
Pulse, its characteristic	71.1 ± 93.8	30.0	10.0–60.0	21.1 ± 18.6	10.0	10.0–30.0	34.1 ± 23.5	20.0	10.0–60.0
Respiratory rate, its characteristic	70.8 ± 97.7	30.0	10.0–60.0	25.3 ± 23.1	10.0	10.0–55.0	39.0 ± 33.5	30.0	10.0–60.0
Pulmonary auscultation: the presence of rales	75.8 ± 96.8	30.0	20.0–105.0	52.3 ± 67.9	30.0	10.0–60.0	57.8 ± 45.6	40.0	25.0–90.0
Palpation of the abdominal cavity: enlargement of the liver	81.7 ± 71.2	60.0	30.0–120.0	36.0 ± 45.0	20.0	10.0–30.0	59.7 ± 49.4	45.0	30.0–60.0
ECG recording in 12 leads or transmission of biometric ECG signals to the consultative telemetry center to address urgent issues of ECG interpretation. At suspicion of AMI of a back-basal wall of a left ventricle - additional assignments on Slopak, at suspicion of AMI of high front departments - registration of thoracic assignments on 2 ribs above, at suspicion of AMI of a right ventricle - registration of the right thoracic assignments	303,8 ± 258.2	270.0	120.0–405.0	191.0 ± 169.2	110.0	60.0–300.0	352.7 ± 171.0	300.0	240.0–420.0
If there are no electrocardio-graphic signs at the beginning of clinical manifestations of AMI, ECG recording should be repeated with an interval of 20-30 minutes	269.1 ± 267.3	300.0	120.0-300.0	174.0 ± 193.1	60.0	60.0–300.0	323.6 ± 183.5	300.0	300.0–420.0
Pulse oximetry (determination of oxygen oxygenation of blood)	18.1 ± 11.9	10.0	10.0–30.0	12.3 ± 10.2	10.0	5.0–12.5	15.0 ± 9.1	10.0	10.0–20.0
Determination of elevated levels of cardiomarkers (Tropinin I and Troponin T, CK-MB, Mioglobin) in the blood using a kit for rapid diagnosis	251.7 ± 213.7	180.0	75.0-300.0	152.8 ± 213.4	60.0	60.0–120.0	309.4 ± 278.3	180.0	60.0–600.0

1	2	3	4	5	6	7	8	9	10
The position of the patient lying down with his head slightly raised. Limit physical activity, provide complete psychological peace	40.3 ± 53.7	30.0	10.0–60.0	11.4 ± 10.2	7.5	5.0–12.5	55.1 ± 74.0	30.0	20.0–60.0
Oxygen therapy. Inhalation of humidified oxygen should be performed using a mask or nasal catheter	133.4± 225.4	30.0	15.0-90.0	16.2 ± 16.0	10.0	10.0–15.0	414.9 ± 504.7	240.0	30.0–600.0
Providing venous access (peripheral vein catheterization)	69.1 ±62.0	60.0	30.0–75.0	27.5 ± 29.6	10.0	10.0–47.5	106.7 ± 55.3	120.0	60.0–150.0
Nitroglycerin under the tongue in tablets or aerosol. In case of severe pain - intravenous drip under constant control of blood pressure and heart rate	26.5 ± 22.1	13.5	10.0–52.5	16.0 ± 17.7	8.5	5.0–25.0	210.2 ± 445.6	30.0	10.0–60.0
Acetylsalicylic acid is used in cases where the patient did not take it on his own before the arrival of the EMST	10.8 ± 8.2	10.0	5.0–10.0	6.1 ± 3.2	5.0	5.0–10.0	24.5 ± 36.3	10.0	5.0–30.0
Clopidogrel 300 mg orally. The use of a combination of acetylsalicylic acid and clopidogrel is effective	12.3 ±8.9	10.0	5.0 ± 15.0	6.1±3.2	5.0	5.0 ± 10.0	24.5±36.2	10.0	5.0–25.0
Narcotic analgesics	132.6 ± 127.4	90.0	30.0–240.0	57.9 ± 73.2	30.0	10.0–60.0	178.2 ± 113.5	120.0	60.0–300.0
β-blockers are prescribed to all patients with AMI who do not have contraindications	36.6 ± 55.2	25.0	5.0–60.0	30.3 ± 69.3	5.0	5.0–10.0	51.1 ± 60.4	60.0	10.0–60.0
Statins are recommended to be prescribed or continued in high doses	17.8 ± 16.3	10.0	5.0–30.0	20.5 ± 65.8	5.0	5.0–10.0	36.9 ± 49.6	10.0	5.0–60.0
Enoxaparin intravenously and 15 minutes later subcutaneously or heparin – i/v	110.6 ± 205.1	42.5	17.5-60.0	30.1 ± 35.8	15.0	10.0–42.5	91.7 ± 135.2	60.0	60.0–60.0
Blood pressure control and correction	134.8 ± 163.2	65.0	60.0–120.0	65.5 ± 61.5	60.0	50.0–60.0	76.2 ± 66.0	60.0	60.0–60.0

For the indicator "Establish the nature of pain, its localization and irradiation" – execution time was respectively 15.2 ± 13.5 sec., 8.6 ± 5.6 sec., 14.2 ± 14.3 sec., p = 0.044, p = 0.886, and p = 0.095.

For the indicator "Determine whether there was an attempt to relieve pain with nitroglycerin" the indicator under analysis was respectively 8.7 ± 6.7 sec., 5.6 ± 2.1 sec., 8.1 ± 5.2 sec., p = 0.050, p = 0.910, and p = 0.035.

For the indicator "Establish the conditions under which pain occurs - whether it is associated with physical load or psycho-emotional stress" it amounted to respectively 15.3 ± 16.1 sec., 7.6 ± 4.1 sec., 15.5 ± 16, 2 sec., p = 0.034, p = 0.770, and p = 0.021.

For the indicator "Find out if there were attacks of pain or suffocation when walking, or forced to stop, their duration in minutes. Were these attacks removed with nitroglycerin?" it constituted 16.6 ± 14.7 sec., 8.0 ± 4.4 sec., 17.2 ± 16.0 sec., p = 0.014, p = 0.846, and p = 0.004, respectively.

For the indicator "Is this attack of pain or suffocation similar to the sensations that occurred earlier during exercise by localization and nature?" it was respectively 12.5 ± 15.6 sec., 6.4 ± 2.3 sec., 11.4 ± 7.5 sec., p = 0.034, p = 0.738, and p = 0.017.

For the indicator "Has the pain increased and became more frequent recently? It is desirable to indicate whether the load tolerance has changed or the need for nitrates has increased" it ran at 16.9 ± 19.3 sec., 7.9 ± 3.7 sec., 17.3 ± 17.8 sec., p = 0.045, respectively. , p = 0.989, and p = 0.067.

For the indicator "Determine which drugs the patient takes daily" the data obtained were respectively 20.9 ± 15.4 sec., 12.8 ± 8.1 sec., 17.8 ± 10.3 sec., p = 0.034, p = 0.590, and p= 0.043.

For the indicator "Find out what drugs the patient took before the arrival of the EMST" we obtained the following result: 16.9 ± 19.1 sec., 7.8 ± 4.4 sec., 16.4 ± 16, 3 sec., p = 0.010, p = 0.887, and p = 0.006.

For the indicator "Find out the presence of risk factors for cardiovascular disease: hypertension, diabetes. Identify in the anamnesis other concomitant diseases: cardiac arrhythmia, cerebrovascular disorders, cancer, gastric and duodenal ulcers, blood diseases and past bleeding, COPD, etc. " the results were 48.8 ± 34.3 sec. , 24.1 ± 20.4 sec., 57.7 ± 47.6 sec., p = 0.001, p = 0.836, and p = 0.002, respectively.]

For the indicator "Collect a general allergy history and determine whether there are allergic reactions to drugs" 20.6 ± 16.7 sec., 24.3 ± 65.2 sec., 33.5 ± 49.0 sec., p = 0.008, p = 0.340, and p = 0.002 were obtained.

For the indicator "Assessment of general condition and vital functions: consciousness, respiration, blood circulation according to the ABCDE algorithm" constituted respectively 34.6 ± 47.0 sec., 15.2 ± 16.1 sec., 38.7 ± 124.3 sec., p = 0.030, p = 0.115, and p = 0.316;

For the indicator "According to the indications eliminate violations of vital functions of the body - respiration, blood circulation" had the following values respectively 272.2 ± 366.3 sec., 125.7 ± 267.7 sec., 178.6 ± 385.8 sec., p = 0.027, p = 0.052, and p = 0.540;

For the indicator "Skin color, humidity, the presence of swelling of the jugular veins" - respectively 12.6 ± 13.9 sec., 6.3 ± 3.9 sec., 9.7 ± 10.0 sec., p = 0.022, p = 0.509, and p = 0.039;

For the indicator "Measurement of blood pressure on both hands" - respectively 83.9 ± 72.3 sec., 56.5 ± 38.9 sec., 108.4 ± 128.8 sec., p = 0.188, p = 0.433, and p = 0.043;

For the indicator "Percussion of the heart: pay attention to the presence of an increase in the limits of cardiac dullness" the following data were obtained: 80.5 ± 84.6 sec., 32.3 ± 21.8 sec., 42.7 ± 31.8 sec., p = 0.007 , p = 0.038, and p = 0.250.

For the indicator "Palpation of the heart: to assess the apex impulse and its location" - respectively 32.9 ± 22.8 sec., 13.6 ± 12.9 sec., 30.1 ± 22.7 sec., p = 0.001, p = 0.557, and p = 0.004.

For the indicator "Auscultation of the heart and blood vessels: assess cardiac sounds and presence of cardiac murmurs, the presence of the third heart sound or the fourth heart sound; cardiac rhythm "- 74.2 ± 95.7 sec., 25.8 ± 19.2 sec., 52.9 ± 35.3 sec., p = 0.008, p = 0.730, and p = 0.001, respectively;

For the indicator "Pulse, its characteristics" - respectively 71.1 ± 93.8 sec., 21.1 ± 18.6 sec., 34.1 ± 23.5 sec., p = 0.018, p = 0.404, and p = 0.025.

For the indicator "Respiration rate, its characteristics" - respectively 70.8 ± 97.7 sec., 25.3 ± 23.1 sec., 39.0 ± 33.5 sec., p = 0.039, p = 0.881, and p = 0.027.

For the indicator "Auscultation of the lungs: the presence of rales" the following data were obtained: 75.8 ± 96.8 sec., 52.3 ± 67.9 sec., 57.8 ± 45.6 sec., p = 0.337, p = 0.806, and p = 0.215, respectively.

For the indicator "Palpation of the abdominal cavity: hepatomegaliar" - respectively 81.7 ± 71.2 sec., 36.0 ± 45.0 sec., 59.7 ± 49.4 sec., p = 0.004, p = 0.369 , and p = 0.003;

For the indicator "ECG registration in 12 leads or transmission of biometric ECG signals to the consultative telemetry center to decide urgent issues of ECG interpretation. At suspicion of AMI of a back - basal wall of a left ventricle - additional leads after Slopak; at suspicion of AMI of high anterior area - registration of thoracic leads on 2 ribs above, at suspicion of AMI of a right ventricle - registration of the right thoracic leads "- respectively 303,8 ± 258.2 sec., 191.0 ± 169.2 sec., 352.7 ± 171.0 sec., p = 0.046, p = 0.084, and p = 0.001.

For the indicator "If at the beginning of clinical manifestations of AMI there are no electrocardiographic signs, ECG recording should be repeated at intervals of 20-30 minutes" - respectively 269.1 ± 267.3 sec., 174.0 ± 193.1 sec., 323 , 6 ± 183.5 sec., p = 0.044, p = 0.036, and p = 0.004.

For the indicator "Pulse oximetry (determination of blood oxigination by oxygen)" - respectively 18.1 ± 11.9 sec., 12.3 ± 10.2 sec., 15.0 ± 9.1 sec., p = 0.023, p = 0.511 , and p = 0.051.

For the indicator "Determination of elevated levels of cardiomarkers (Tropinin I and Troponin T, CK-MB, Mioglobin) in the blood using a kit for rapid diagnosis" - respectively 251.7 ± 213.7 sec., 152.8 ± 213.4 sec ., 309.4 ± 278.3 sec., p = 0.029, p = 0.538, and p = 0.003.

For the indicator "Position of the patient lying with his head slightly raised. Limit physical activity, provide complete psychological peace "- respectively 40.3 ± 53.7 sec., 11.4 ± 10.2 sec., 55.1 ± 74.0 sec., P = 0.003, p = 0.199, and p = 0.000.

For the indicator "Oxygen therapy. Inhalation of humidified oxygen should be performed using a mask or through a nasal catheter "- 133.4 ± 225.4 sec., 16.2 ± 16.0 sec., 414.9 ± 504.7 sec., P = 0.001, p = 0.010, and p = 0.000;

For the indicator "Provision of venous access (peripheral vein catheterization)" - respectively 69.1 ± 62.0 sec., 27.5 ± 29.6 sec., 106.7 ± 55.3 sec., p = 0.000, p = 0.000, and p = 0.000.

For the indicator "Nitroglycerin under the tongue in tablets or aerosol. In the case of severe pain - intravenous drip under constant control of blood pressure and heart rate "- respectively 26.5 ± 22.1 sec., 16.0 ± 17.7 sec., 210.2 ± 445.6 sec., p = 0.047 , p = 0.244, and p = 0.009.

For the indicator "Acetylsalicylic acid (is used in cases where no its self-admimistration by the patient before EMST arrival")- respectively 10.8 ± 8.2 sec., 6.1 ± 3.2 sec., 24, 5 ± 36.3 sec., p = 0.019, p = 0.273, and p = 0.004.

For “Clopidogrel 300 mg orally. The use of a combination of acetylsalicylic acid and clopidogrel is effective” - respectively 12.3 ± 8.9 sec., 6.1 ± 3.2 sec., 24.5 ± 36.2 sec., p = 0.005, p = 0.495, and p = 0.003.

For the indicator "Narcotic analgesics" - respectively 132.6 ± 127.4 sec., 57.9 ± 73.2 sec., 178.2 ± 113.5 sec., p = 0.021, p = 0.053, and p = 0.000.

For the indicator "Beta-blockers are prescribed to all patients with AMI who have no contraindications" - respectively 36.6 ± 55.2 sec., 30.3 ± 69.3 sec., 51.1 ± 60.4 sec., p = 0.048, p = 0.221, and p = 0.010.

For the indicator " Statins it is recommended to prescribe or continue taking statins in high doses" - respectively 17.8 ± 16.3 sec., 20.5 ± 65.8 sec., 36.9 ± 49.6 sec., p = 0.002, p = 0.658, and p = 0.011.

For the indicator "Enoxaparin intravenously and after 15 minutes additionally subcutaneously or heparin - intravenously push" - respectively 110.6 ± 205.1 sec., 30.1 ± 35.8 sec., 91.7 ± 135.2 sec., p = 0.043, p = 0.138, and p = 0.002.

For the indicator "Control and correction of blood pressure" - respectively 134.8 ± 163.2 sec., 65.5 ± 61.5 sec., 76.2 ± 66.0 sec., p = 0.039, p = 0.095, and p = 0.207.

Conclusions. The study conducted indicates significant variability in the implementation of protocol items in different EMST. The shortest time of medical care rendering is typical for doctors with average experience in EMST (10 to 20 years), it is slightly longer for doctors with long (over 20 years) experience, and the longest - for doctors with short (up to 10 years) experience in EMST. A slightly longer time to perform indicators in the group with long service may be associated with age (average age of doctors in this group is 57 y.o., in the presence of persons over 70 y.o.). The longest execution time in the group with the shortest experience in EMST reflects the lack of experience and a greater number of diagnostic and treatment errors, avoidance of which require additional time.

The identified patterns must be taken into account when developing measures to optimize the time of medical care by teams E (W) MD.

References:

1. Medico-social aspects of the problem of non-communicable diseases in the mirror of world, European and national statistics / TS Gruzeva, LI Galienko, VA Dufinets // Eastern European Journal of Public Health. - 2016. - № 1. (26) - P. 15-22.

2. Gandziuk VA Epidemic of cardiovascular diseases at the global, regional and national levels / VA Gandziuk, TS Gruzeva // Eastern European Journal of Public Health. - 2016. - №1 (26). - P. 62-63.

3. Unified clinical protocol of emergency, primary, secondary (specialized) and tertiary (highly specialized) medical care and medical rehabilitation. Acute coronary syndrome with ST-segment elevation" / approved. Order Ministry of Health of Ukraine № 455 dated 02.07.2014 - Kyiv: State Expert Center of the Ministry of Health of Ukraine. - 92 p.

4. Verulava T. Hospitalization timeliness of patients with myocardial infarction / Tengiz Verulava, Tamar Maglakelidze, Revaz Jorbenadze // East J. Med. – 2017. – Vol. 22(3). – P. 103-109.

5. Task Force on the management of ST-segment elevation acute myocardial infarction of the Europe an Society of Cardiology (ESC) / Steg P.G., James S.K., Atar D. et al. ESC Guidelines for the management of acutemyocardial infarction in patients presenting with ST-segment elevation // Eur. Heart J. – 2012. – Vol. 33. – P. 2569–2619.