

Surface Electrocardiogram Predictors of Sudden Cardiac Arrest

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Annotation: Arrhythmia is a common complication in patients with acute myocardial infarction (MI). This article examines and discusses the importance of accelerated idioventricular rhythm (IVR), ventricular fibrillation, or tachycardia (VF, VT), atrial fibrillation or flutter (AF), and bradycardia. The importance of the presence of IVR as a sign of reperfusion is small, but in combination with other non-invasive markers (ST segment sizes), its presence is associated with a high probability of successful reperfusion. Early ventricular arrhythmias are a serious complication of MI. However, with timely detection and treatment, they do not represent a negative prognostic factor. In this article, we analyzed predictors of stable ventricular arrhythmias after acute myocardial infarction and the effects of successful revascularization on hospital death

Key words: myocardial infarction, ischemia, arrhythmia

Relevance. Late onset VF or VT is a broad MI [2,6,11,12] symptom. Atrial fibrillation, which does not directly threaten the lives of patients, is often found in patients with extensive MI and is an independent predictor of a poor long-term prognosis in these patients [2,4,9,13]. Early and successful reperfusion therapy is the best method of antiarrhythmic therapy in patients with MI. Stable ventricular arrhythmia acute myocardial infarction (MI) is associated with the development of complications from 2% to 20%, with a sharp deterioration in the patient's condition leading to death [3,5,9,10]. However, it remains unclear whether successful mechanical revascularization improves outcomes in these patients. However, little is known about the prevalence, risk factors, and prognosis of stable VT/VF occurring in the Cardiac Catheterization Laboratory in ST MI patients with primary subcutaneous coronary intervention (TOKA) [1,3,6,12]. It is not clear how to achieve rapid reperfusion in primary TOKA, while on the one hand it helps to achieve complete reperfusion, on the other hand it is uncertain to what extent these arrhythmias after primary TOKA affect their susceptibility and outcomes [8,10].

Keywords: angioplasty, death, myocardial infarction (MI), ventricular arrhythmia, subcutaneous coronary intervention.

Research objective. Determination of risk factors affecting the degree of lethality when coronary intervention through the skin is carried out in the case of arrhythmia observed in patients with myocardial infarction.

Materials and research methods. We conducted a retrospective analysis of disease analysis of all patients who underwent skin-to-skin coronary intervention for acute MI in the Bukhara region in 2022-2023. If patients have contraindications to reperfusion, patients undergoing thrombolytic therapy regarding ECG da ST segment elevation, MI treatment, or kidney failure, cardiogenic



shock, pregnancies have been excluded from these studies. In this study, we determined the amount of cytokines (IL-4, IL-6, IL-8, IL-10, IL-12, TGF-β, INF-γ) using the IFT (immunofluorescence analysis) method. Prior to the study, written consent was obtained from patients. Comparisons between the two study groups were made using the Wilcoxon rank sum test for constant variables and the A x2-square test, or Fisher's criterion for categorical variables (when the expected cell frequency was <5), a statistical analysis.

Research results. It is known that the study of the Anamnesis of patients in the development of the disease is of great importance. In the process of studying the Anamnesis of patients, the following features were identified. Of the 90 patients, 49 (54.4%) were smokers (an average of more than 10 cigarettes per day), and 13 (14.4%) smoked 5-9 cigarettes per day. Alcohol was taken once a month by 24 patients (26.6%), once every 2 weeks by 14 of them (15.5%), and once a week or more by 19 (21.1%). Irregular lifestyles were reported by 42 (46.6%), stress by 53 (58.8

In a deeper analysis of the study, we witness that severe levels of MI are more common in patients with a high incidence of harmful habits in their Anamnesis. It was in these that we were forced to immediately undergo subcutaneous percutaneous coronary intervention in order to reduce the heart attack in order to save the patient's life after the time spent with acute MI. Of the 90 patients who underwent percutaneous coronary intervention for acute MI, 2 (5.2%) developed stable ventricular tachycardia (VT) or ventricular fibrillation (VF) before revascularization.

After complex treatment measures, VT / VF meso as stable independent predictive signs that assess the risk of developing shock after cardio (difference ratio 4.10; 95% confidence interval [CI], 3.20–5.58; p<0.001), cardiac (or, 2 .86; 95% CI 2.24–3.67: p < 0.001), chronic kidney disease (or 2.58; 95% CI 1.27–5.23; p = 0.009), and was found to be important for assessing onset within 6 hours of onset of symptoms (or 1.46; 95% CI, 1.18–1.81; p = 0.001).

Hospital deaths of patients with stable VT/VF observed were recorded (16.3% et al 3.7%, P<.001). While successful percutaneous coronary intervention was associated with reduced hospital mortality in patients with VT/VF (P < 0.001), patients with stable VT/VF and successful revascularization had higher mortality rates compared to those without ventricular arrhythmias (P < 0.001).

The cytokine balance is accompanied by a change in anti-inflammatory cytokines (IL-4, IL-13, TNF-α) and immunosuppressor cytokines (IL-10, TGF-β) in the myocardial infarction furnace. The level of synthesis of these cytokines as well as the balance of inflammatory reactants play an important role in disease progression and prediction.

Table 1. The dynamics of change of cytokines examined in arrhythmias observed in myocardial infarction are those recovered from the disease, as well as in cases where lethality is observed.

Groups	INF-γ pg/ml	IL- 4 pg/ml	IL- 6 pg/ml	IL-8 pg/ml	IL-10 pg/ml
Patients with lethality observed (n=15)	27,14+0,01*	3,16+0,	13,24+0,5*	26,3+0,33	1,54+0,04
Recovered patients (n=75)	48,72+2,84	374,19+6,58	107,12+3,44	32,81+2,6	8,12+6,84

Note: * - indicators reliability level (p≤0.05)

An analysis of anti-inflammatory cytokines, which began as early as the first days after treatment, revealed the gmigdor TGF-β, IL-4, IL-10 nin. This revealed their high concentration in the blood. The amount of IL-4 showed the most pronounced tendency to rise among all other anti-inflammatory cytokines. In the case of successful subcutaneous coronary intervention, its concentration was found in the highest titers on the 14th day. And the amount of IL-10 was recorded in the highest titers on the 1st and 7th day. In doing so, it was found that its amount



exceeded Day 1 and fell to the limit of the norm on Day 21. The amount of TGF- β , on the other hand, was recorded in high titers going to day 21. From the above indicators, it follows from the data that anti-inflammatory cytokines recovered higher in comparison with patients with lethality observed. This condition is evidenced by the active response of the body itself to delimiting the necrosis zone.

Conclusion. For acute MI, stable VT/VF remains a significant complication of 4-fold increased risk of hospital death among patients undergoing skin-mediated coronary intervention. Early mortality decreases after successful subcutaneous coronary intervention, but remains high in this high-risk group.

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