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ARRHYTHMIAS DUETO MYOCARDIAL INFARCTION, CAUSES AND CONSEQUENCES.

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SUMMARY .*Arrhythmias are a common complication in patients with acute myocardial infarction (MI). This article reviews and discusses the importance of accelerated idioventricular rhythm (IVR), ventricular fibrillation or tachycardia (VF, VT), atrial fibrillation or flutter (AF), and bradycardia. The significance of the presence of IVR as a marker of reperfusion is small, but in combination with other non-invasive markers (ST segment resolution), 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 the predictors of sustained ventricular arrhythmias after acute myocardial infarction and the impact of successful revascularization on in-hospital mortality.*

RELEVANCE. Late-onset VF or VT is more of a symptom of extensive MI [1,3,8,10]. Atrial fibrillation, which does not pose an immediate threat to the life of patients, often occurs in patients with extensive MI and is an independent predictor of poor long-term prognosis in these patients [2,4,9,17]. Early and successful reperfusion therapy is the best method of antiarrhythmic therapy in patients with MI. Sustained ventricular arrhythmias complicate 2% to 20% of acute myocardial infarctions (MI) and are associated with increased in-hospital mortality [5,7,11,15]. However, it remains unclear whether successful mechanical revascularization improves outcomes in these patients. However, much less is known about the incidence, risk factors, and prognosis of sustained VT/VF occurring in the cardiac catheterization laboratory in ST MI patients undergoing primary percutaneous coronary intervention (PCI) [6,12,14,19]. It is not clear how rapid reperfusion is achieved in primary PCI (with a concomitant rapid change in the metabolic cellular environment, which leads to regional electrophysiological instability), on the one hand, and more complete reperfusion, on the other hand, affect the predisposition and outcomes of these arrhythmias after primary PCI [9, 13,16,18].

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KEYWORDS: angioplasty, mortality, myocardial infarction (MI), ventricular arrhythmia, percutaneous coronary intervention.

Purpose of the study. To determine the predictors of arrhythmias in patients with myocardial infarction.

MATERIALS AND RESEARCH METHODS. We conducted a retrospective cohort study of all patients who underwent percutaneous coronary intervention for acute MI in Bukhara region, Uzbekistan between 2021 and 2022. Patients were excluded from these studies if they had contraindications to reperfusion, were receiving thrombolytic therapy for ST MI index, or had renal insufficiency, cardiogenic shock, or life expectancy <1 year; persons with childbearing potential. Informed consent was obtained from all patients by investigators at the respective institutions. Comparisons between the two study groups were made using a two-tailed Wilcoxon rank sum test for continuous variables and a chi-square test or Fisher's exact test (when expected cell frequency was <5) for categorical variables, as appropriate.

RESEARCH RESULTS. In the course of studying the anamnesis of patients, the following features were found. Of the 90 patients, 49 (54.4%) were smokers (averaging more than 10 cigarettes per day), 13 (14.4%) of them smoked 5 to 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%), once a week or more by 19 (21.1%). Wrong lifestyle was noted by 42 (46.6%), stress by 53 (58.8%). These indicators are shown in Figure 1. See Figure 1.

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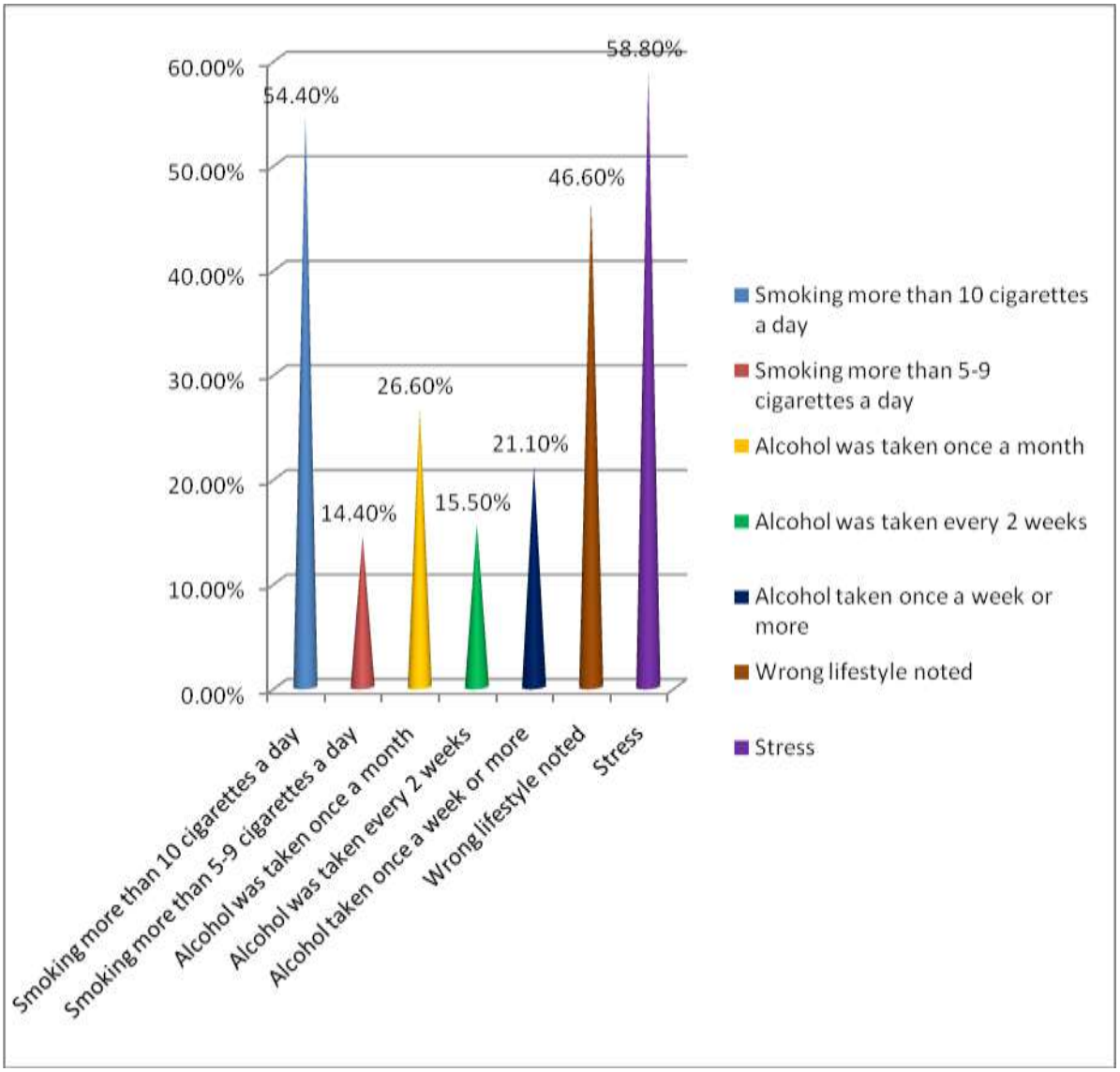
Figure 1. Anamnestic data of patients.



Of 90 patients who underwent percutaneous coronary intervention for acute MI, 2 (5.2%) developed sustained ventricular tachycardia (VT) or ventricular fibrillation (VF) prior to revascularization.

After multivariable adjustment, independent predictors of sustained VT/VF included cardiogenic shock (odds ratio [OR], 4.10; 95% confidence interval [CI], 3.20–5.58; P<0.001), heart failure (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 onset within 6 hours of onset of symptoms (OR 1.46; 95% CI, 1.18–1.81; p = 0.001).

Patients with sustained VT/VF had higher in-hospital mortality (16.3% vs. 3.7%, P<.001). Although successful percutaneous coronary intervention was associated with a reduction in in-hospital mortality in patients with VT/VF (P < 0.001), patients with sustained VT/VF and successful revascularization had higher mortality compared with patients without sustained ventricular arrhythmias (P < 0.001).

CONCLUSION. Among patients undergoing percutaneous coronary intervention for acute MI, sustained VT/VF remains a significant complication associated with a 4-fold increased risk of in-hospital mortality. Early mortality decreases after successful percutaneous coronary intervention but remains elevated in this high-risk group.

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