The American Journal of Medical Sciences and Pharmaceutical Research (ISSN – 2689-1026)
VOLUME 05 ISSUE 06 Pages: 74-80
SJIF IMPACT FACTOR (2020: 5. 286) (2021: 5. 64) (2022: 6. 319) (2023: 7. 396)
OCLC – 1121105510
Publisher: The USA Journals

Journal Website: https://theamericanjournals.com/index.php/tajmspr

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Research Article

PREVENTION OF CARDIOVASCULAR COMPLICATIONS IN PATIENTS WITH RHYTHM DISTURBANCES AND PSYCHO-EMOTIONAL DISORDERS

Submission Date: June 20, 2023, Accepted Date: June 25, 2023,
Published Date: June 30, 2023 |
Crossref doi: https://doi.org/10.37547/TAJMSPR/Volume05Issue06-13

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ABSTRACT

Today, cardiac rhythm disturbances are quite common in the adult population. The correct tactics of outpatient management as well as timely diagnostics of heart rhythm disturbances considerably reduces the percentage of patients suffering from complications of heart rhythm disturbances, improves quality of life of patients and reduces risks of lethal outcome. The aim of our study was to detect psycho-emotional disorders among outpatients with heart rhythm disturbances who had myocardial infarction. 62 patients diagnosed with coronary heart disease (CHD), postinfarction cardiosclerosis (PICD) and various types of rhythm disturbances were studied in Samarkand 3rd family polyclinic. The mean age of the patients was 62.8±12.1 years. During the study we have established the relationship between the progression of signs of rhythm disturbances and psycho-emotional status of the patients based on the HADS score interpretation. Conclusions: thus, our study proves that all patients, in particular myocardial infarction patients, should be tested with Hospital Anxiety and Depression Scale - HADS already in the outpatient phase for early detection of psychoemotional disorders to reduce cardiovascular complications, as well as to provide timely targeted care already in the primary care.

KEYWORDS

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Psych emotional disorders, rhythm disturbance, postinfarction cardiosclerosis, atrial fibrillation, extrasystole.

INTRODUCTION

Rhythm disturbance is the cause of more than 25% of ischaemic strokes, which have quite severe consequences due to the severity of both neurological deficit, the severity of the course of the disease, and the high mortality and disability [1,2,3]. In this regard, primary and secondary prevention of stroke, reducing mortality from this disease, is a global challenge around the world. Today, one of the main tasks of outpatient facilities is timely detection of cardiac rhythm disturbances and further prevention of such complications as cardiovascular disorders [4,5,6]. In turn, the incidence of various rhythm disturbances in the pre-hospital phase has been poorly studied, as well as the etiological factors of this disease are poorly understood. The knowledge of etiological factors of heart rhythm disorders greatly facilitates the detection of the disease, as well as the prevention of its complications. For timely diagnostics of rhythm disturbances and prevention of cardiovascular complications at outpatient stage it is necessary to study psycho-emotional state of a patient carefully, because psychological state of a patient is one of the important factors of cardiovascular pathologies appearance, such as heart rhythm disturbances [3,11]. According to some authors, psycho-emotional stress is an advanced triggering mechanism in the development of cardiac rhythm disturbances, further leading to cardiovascular complications. Diagnostic methods to detect arrhythmias include electrocardiography, 24-hour electrocardiogram monitoring, and EchoCG.

The aim of the study was to identify psycho-emotional disturbances in persons with cardiac rhythm disturbances who underwent myocardial infarction in the pre-hospital phase.

Materials and Methods: 62 patients diagnosed with coronary heart disease (CHD), postinfarction cardiosclerosis (PICC) and various types of rhythm disturbances were studied at the 3rd Family Outpatient Clinic in Samarkand city. The mean age of the patients was 62.8±12.1. All patients depending on the presence, absence and type of rhythm disturbances were divided into 3 groups: the first group - 22 (35,4%) patients with CHD and PICS without rhythm disturbances, the 2nd group - 21(33,8%) patients with verified Lown class II extrasystoles (more than 30 extrasystoles during 1 hour), and the third group - 19 (30,6%) patients with persistent AF (Figure 1). Arterial hypertension was observed in 79, 1% of patients, and heart failure was detected in 98% of patients. Exclusion criteria were: history of stroke, diabetes mellitus type I and II, liver and kidney damage, and malignant neoplasms.

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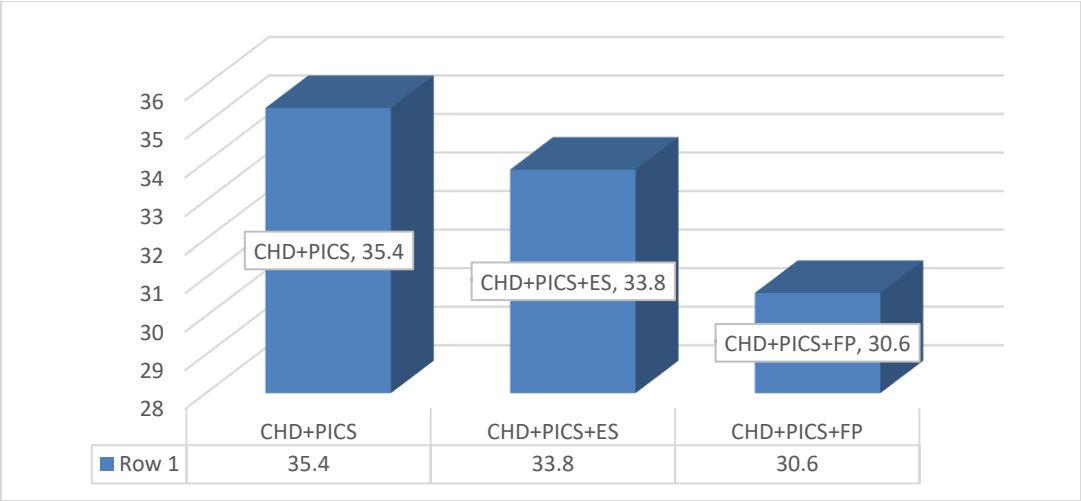

Figure 1: Distribution of patients according to the presence of rhythm disturbance.

Psycho-emotional status was assessed using the Hospital Anxiety and Depression Scale - HADS [19]. The questionnaire is designed to detect and assess the severity of depression and anxiety in general practice and has high discriminant validity for the two disorders of anxiety and depression. The scale is composed of 14 items serving 2 subscales. When interpreting data, the total score for each subscale (A and D) is taken into account, with 3 scores being allocated to the area: 0-7 points for normal; 8-10 points for severe subclinical anxiety/depression; 11 points or more for symptomatic anxiety/depression. The advantages of the scale are its ease of use and processing, which allows its use in somatic practice for the primary detection of an anxiety-depressive syndrome to be recommended [6,12,17].

The results were statistically processed using a standard analysis software package (Microsoft Exsel 2007) and scientific and evidence-based medicine indicators.

Results of the study: During the study we established the connection of progression of signs of rhythm disturbance with psychoemotional states of patients on the basis of interpretation of the HADS scale results. And so manifestations of anxiety symptoms were found in 9 patients of the 1st group (40,9%), in 16 patients of the 2nd group (76,1%) and in 17 patients (89,4%) of the 3rd group. Depressive disorders were significantly more frequent among patients with persistent FP: in 16 patients (84.2%) of group 3, and in 11 (52.3%) of group 1, in 8 (36.3%). The severity of psycho-emotional disturbances (PERs) in all three groups had different HADS scores, with clinically pronounced PERs being significantly more frequent among patients with AF. The mean anxiety and depression scores were 11.47±2.93, 10.80±3.42 among the patients with AF, whereas among those without rhythm disturbances, the mean anxiety/depression scores were 7.57±1.73, 6.26±1.98, respectively ($P<0.001$) (Table 1), i.e., the severity of the underlying disease was associated with progression of PER signs.

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HADS scores	CHD+PICS+FPB, n=19	CHD+PICS+ES n=21	CHD+PICS, n= 22	P-value
Anxiety	11,47±2,93	8,0±2,31	7,57±1,73	P<0,001
Depression	10,80±3,42	8,25±0,44	6,26±1,98	P<0,001

HADS scores	CHD+PICS+FPB, n=19	CHD+PICS+ES n=21	CHD+PICS, n= 22	P-value
LVF (%)	52,8±8	50,2±7,1	49,2±6,2	0.032 F(2,426)=0,386
CER (cm)	5,6±1	5,5±0,9	5,6±0,8	0,92
ccR (cm)	5,1±0,67	5,3±0,68	5,3±0,67	0.02 F(2,426)=3.98
LV (cm)	1,29±0,3	1,34±0,3	1,32±0,3	0.946
LV (cm)	1,27±0,4	1,29±0,5	1,3±0,5	0,87
RV (cm)	2,75±0,6	2,76±0,7	2,78±0,6	0,72
LP (cm)	3,49±0,6	3,48±0,6	3,43±0,7	0,63
Aorta (cm)	3,0±0,4	3,1±0,6	3,2±0,7	0,89
T-wave inversion (%)	36,4%	57,1%	57,8%	0,034

The studies showed that LVEF was significantly lower among patients with ES and AF compared to patients without rhythm disturbance (F(2,426)=0.386). Among patients with rhythm disturbances, cases with T-wave inversion were significantly more frequent (P=0.034) (Table 2).

Table 2

To confirm the findings, we decided to compare EchoCG and ECG findings.

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All patients with psycho-emotional disorder were prescribed fluoxetine in combination with conventional therapy, which was prescribed by the physician. The follow-up period of the patients was 3 months.

To reveal the role of the studied drug on myocardial size in treatment dynamics, the patients with CAD associated with PER underwent EchoCG with following parameters: LV contracture diameter, LVEF, LVM, EF.

The EchoCG findings after treatment for group 1 patients with CHD + PICS were: LV MVP - 5.41±8.0, VSL - 11.1±1.2, LVEF - 11.3±2.2, EF - 52.8±5.1. For group 2 IBS+PICS+PES patients, the LV HR was 5.3±7.1, VSL - 11.2±1.2, LV - 11.2±2.2, PV - 52.1±5.2; and for group 3 IBS+PICS+PES patients, the LV HR was 5.2±7.0, VSL - 11.1±1.2, LV - 11.4±2.5, PV - 51.3±5.1. HADS PER scores were also significantly reduced to subclinical and in some patients to complete treatment. The average PER severity scores are shown in Table 3.

Table 3.

Distribution of patients according to the severity of PER before and after treatment with TrT+fluoxetine

HADS scores	CHD+PICS+FPB, n=19		CHD+PICS+ES n=21		CHD+PICS, n= 22		P-value
Anxiety	11,47±2,93	9,3±1,8	8,0±2,31	6,5±1,1	7,57±1,73	6,2±1,0	P<0,001
Depression	10,80±3,42	9,1±1,7	8,25±0,44	5,9±0,9	6,26±1,98	5,7±0,8	P<0,001

The significance of anxiety and depression as a predictor of cardiovascular disease is more pronounced in patients with cardiac arrhythmias. One important point is to identify patients for clinical and subclinical levels of anxiety-depressive disorders, as in most cases these affective disorders are "masked" by somatic and autonomic symptoms, so that very often the pathology is diagnosed quite late and cannot be treated. When the patient is questioned more thoroughly, using psycho-emotional status assessment techniques, it is usually possible to identify the actual anxiolytic and depressive symptoms. A number of clinical studies have demonstrated that while subclinical manifestations of an anxiety-depression syndrome can be evaluated by a patient's specific complaints, which are subjective, clinical anxiety and depression contribute to specific manifestations that can be objectively determined and directly affect the patient's condition [7,9,11].

Anxiety and depression are the most studied psychological risk factors for heart rhythm disturbances. Several meta-analyses and systematic reviews have shown that these affective disorders, even if they do not exceed the subclinical threshold in severity, not only reduce the quality of life of cardiac patients, but also significantly affect their prognosis [12,13,15].

CONCLUSIONS

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Thus, our study proves that all patients, particularly myocardial infarction patients, should be tested with the Hospital Anxiety and Depression Scale - HADS as early as the outpatient stage to identify psychoemotional disturbances in order to reduce cardiovascular complications and to provide timely, targeted care already at the primary care level.

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