

Ishemic heart disease and electrocardiographic changes in hospitalized mental patients

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ABSTRACT

Spread of the ischemic heart disease (IHD) in psychiatric patient is less studied, only several studies have demonstrated higher rates of cardiovascular death among hospitalized mental patients, particularly those with schizophrenia, compared with the general population. The aim of present work was to reveal electrocardiographic changes in patients with schizophrenia and to make their analysis. Totally electrocardiographic changes were manifested in 44,3% of the patients, normal ECG data were obtained in 55,7% of the patients. Out of 30 healthy people studied only 2 (6,6%) showed electrocardiographic changes. As the results have shown, ECG changes occurred in quite high rate (44,3%) amongst the patients with schizophrenia.

KEYWORDS: *ischemic heart disease, EKG changes, schizophrenia*

Spread of the ischemic heart disease (IHD) in psychiatric patients is less studied, only several studies have demonstrated higher rates of cardiovascular death among psychiatric patients, particularly those with schizophrenia, compared with the general population (Waddington et al,1998). Cardiac risk factors, including smoking, lack of exercise, obesity, substance-misuse and high autonomic arousal during physical restraint, are overrepresented in psychiatric patients.

More refined analyses of the hypothalamic-pituitary-adrenocortical (HPA) system revealed that corticosteroid receptor signaling is impaired, resulting in increased production and secretion of corticotrophin-releasing-hormone in various brain regions. As it is further known administered corticosteroids induce hypercholesterinaemia, hypertriglyceridaemia and hypertension and that elevated morning cortisol concentrations were correlated with coronary arteriosclerosis, a relation between mental disorder and cardiovascular disease seems plausible.

Mental diseases are also associated with increased rates of coronary artery disease and cardiac mortality, possibly mediated by coronary artery spasm and sympathetic-mediated cardiac arrhythmias, but the association is less well studied and documented.

It is necessary to consider cardiovascular effects of psychotropic medication. The cardiotoxicity and mortality from overdose of tricyclic antidepressants is well established. Toxicity arises from sodium (Na⁺) ion channel blockade, known as Type 1 antiarrhythmic action.

The aim of present work was to reveal electrocardiographic changes in patients with schizophrenia and to make their analysis.

MATERIALS AND METHODS

71 (n=71) patients with the diagnosis of schizophrenia were investigated. Their age varied from 35 to 70 years, amongst them 29 females and 42 males, simultaneously the healthy population was studied (30 healthy people).

We have studied their history of disease. Diagnoses were assessed by the tests for schizophrenia assessment: SAPS and SANS.

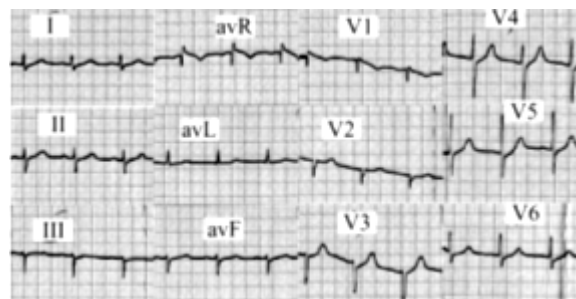
Anamnestic data were collected by means of questionnaires, in which there were indicated: age, sex, heredity, presence of pain in left chest (heart) area, arterial hypertension, tobacco and other factors, these

data were checked with the patients' parents and nursing medical staff.

Electrocardiographic research was performed by the apparatus ЭКИТ-04 with the speed 25 mm/s. Statistic analysis of the data was made by means of the methods of variation statistics using Students' criterion and computer program STATISTIKA/W 5.0. Tab.1.

RESULTS

Out of 71 (n=71) studied patients heredity was charged in 14,2%, pain in the heart area was complained by 7,1%, arterial hypertension by 7,1%, tobacco smokers are 99,1%, Diabetes melitus in 4,2%, alcohol abuse by 5,7%, neural stress contracted by 8,5%. Electrocardiographically: sinus tachycardia 1,14%, sinus bradycardia 5,7%, QT was prolonged in 21,4%, ST depression in 7,14%, ST nonspecific changes in 12,8%, T wave nonspecific changes in 7,14%, blockade of Hiss bundle in 7,14%, ventricular extrasystoles in 2,8% scar due to infarction in 14,2% (Fig.1,2).



Left bundle branch block. Scar due to infarction. ST depression V4-V5.

Fig.1 ECG of the patient with schizophrenia.

Totally electrocardiographic changes were manifested in 44,3% of the patients, normal ECG data were obtained in 55,7% of the patients.

Out of 30 healthy people studied only 2 (6,6%) showed electrocardiographic changes.

As the results have shown, ECG changes occurred in quite high rate (44,3%) amongst the patients with schizophrenia.

ECG changes in Heart Ischemic Disease were various, but each of them could be conducted to the electrocardiographic signs of Myocardial ischemia, ischemic lesion and necrosis of the heart muscle and also to their combinations.

	ECG changes		Normal ECG		p
	n=32		n=39		
	Mean	SD	Mean	SD	
Pulse	76,0	13,8	79,6	11,2	NS
PQ	0,16	0,02	0,15	0,03	NS
QRS	0,07	0,018	0,06	0,020	0,032
QT	0,39	0,043	0,37	0,030	0,03
S.I	49,5	10,1	48,5	8,3	NS

Tab.1 Electrocardiographic changes in hospitalized mental patients (statistical analysis).

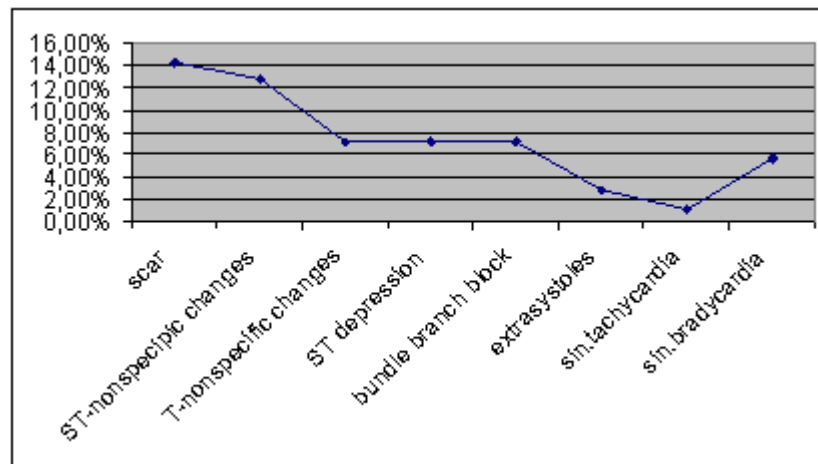


Fig.2 ECG changes in psychiatric patients.

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Ишемическая болезнь сердца и электрокардиографические изменения среди психически больных

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Р Е З Ю М Е

Распространение ишемической болезни сердца (ИБС) среди психиатрических пациентов изучено в недостаточной степени. Целью настоящего исследования являлось выявление ИБС среди пациентов этой группы, определение риск-факторов развития болезни и выявление электрокардиографических изменений. Обследование проводилось у 71 больного. Патологические изменения были зафиксированы в 44,3% случаях. Анализ итогов исследования показал, что ИБС у психически нездоровых людей встречается гораздо чаще, чем у психически здоровых.

Ключевые слова: ишемическая болезнь сердца, шизофрения, ЭКГ изменения

□ **International committee of medical journal editors. Uniform requirements for manuscripts submitted to biomedical journals.** Ann Intern Med 1997;126:36-47.

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