Original Article

Thrombolysis In Acute Coronary Syndrome In The Old And Elderly Patients

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Abstract

Retrospective analysis of 50 medical records was performed to compare the mortality rates after thrombolytic therapy and without it in old and elderly patients with acute coronary syndrome with ST elevation in order to evaluate complications following thrombolytic therapy, its effectiveness according to ECG signs, and History has acted. Although arrhythmias are less common in senior individuals than in other groups (p 0.001), it was discovered that the frequency of hemorrhagic consequences is higher in this population. Elderly patients' thrombolytic therapy effectiveness is less effective than that of middle-aged patients' (p> 0.05), but not older patients' (p > 0.05). In older and middle-aged patients, the mortality rate was consistently lower than it would have been without thrombolytic therapy (p > 0.05), but not substantially different in the elderly (p > 0.05).

Keywords: thrombolytic therapy, old age, mortality, complications, efficiency, acute coronary syndrome with ST elevation.

Introduction

In cases of acute coronary syndrome, thrombolytic therapy aims to repair damaged arteries as soon as possible. Thrombolytic medicines are used to thin out the clot. The primary characteristic of contemporary thrombolytic medications is activation

of plasminogen, which results in plasminogen's transformation into plasmin-active protease, which can break fibrin.

When administered relatively early in the course of an older patient's ACS, thrombolytic treatment has favorable outcomes. About 20–30/1000 people can be saved if FT is used within the first 12 hours of an incident.

When thrombolytic therapy is used, the death rate and frequency of complications in senior ACS patients are reduced. improvement in clinical status of ACS patients, according to authors.

Aim of study: Compare efficiency of thrombolytic therapy according ECG, possible complications, mortality rate.

Materials and methods of research: Research included 50 patients with ACS who were

hospitalized in cardiology department during 2016-2018 period of time and were undergone thrombolytic therapy with streptokinase 1.5 mln units. Patients were divided into 3 groups according to their age: 1st group – 25 patients under 59, 2 nd group- 20 patients 60-74 years old, 3 rd group- 5 patients older than 75 years old. Data processing was made by using program Statistic 6.

Results and discussion. Complications of thrombolytic therapy were divided in 5 groups:

hypotension, allergic reactions, hemorrhagic reactions, arrhythmias, relapse of myocardial

infarction. Hypotension was indicated in group of old and elder patients and in patients under

59 years old (1st group- 18.2%, 2nd- 15.3%, 3rd 17.9%, $p > 0.05$). Allergic reaction was not

mentioned in elderly patients, in 1st and 2nd groups - 0.4-0.9 % ($p > 0.05$) accordingly. Frequency of

myocardial infarction relapse in 3rd and 1st groups roughly same (2.1-2.4% accordingly, p>0.05),

although in 2nd group this data was higher (8.2%, p> 0.05). Arrhythmia in elderly patients marked

much more rarely, than in patients of 1st and 2nd groups (10.6%, 34.0% and 28.6% accordingly,

p< 0.001), whereas frequency of hemorrhagic reactions was higher in patients of 3rd group (19.6%,

p< 0.001) and similar in 1st and 2nd groups (4.9 and 5.5%, p 0.05).

All dates are illustrated in Table №1.

Complications of thrombolytic therapy

Complications	Groups of patient		
	1st	2nd	3rd
Hypotension	18.2	15.3	17.9
Allergic reactions	0.4	0.9	
Hemorrhagic reactions	4.9	5.5	19.6
Arrhythmias	34.0	28.6	10.6
Relapse of myocardial infarction	2.4	8.2	2.1

Efficiency of thrombolytic therapy was assessed according ECG signs (decreasing of ST elevation more than 50% on ECG which registered after 3 hours from the beginning of thrombolytic therapy). According data it was found that in patients of 75 years old and older its efficiency in terms of ECG reperfusion indicators is reliably lower than in the first group (60.1 and 89.3% respectively, p<0.05) and relatively similar to that of the second group (85.7% respectively, p> 0.05).

The effectiveness of thrombolytic therapy of different groups are shown in the table № 2.

Table № 2 **Frequency of ECG signs after thrombolytic therapy**

Groups of patients	**Effectiveness of thrombolytic therapy**
1 st	89.3
2 nd	85.7
3 nd	60.1

Mortality rate in thrombolytic therapy in the 1st group makes up 4.1%, without the thrombolytic measures is 6.2% ($p < 0.05$), for the 2nd group the death rate draws up 10.4% with the thrombolytic therapy, without it - 15.5% ($p < 0.05$), in the 3rd group in the case of the thrombolytic therapy - 17.2%, without it -19.6% ($p > 0.05$). Mortality rate of cases with thrombolytic therapy is demonstrated in the Table № 3.

Table № 3 Mortality rate after thrombolytic therapy

Mortality rate	Groups		
	1st	2nd	3rd
After thrombolytic therapy	4.1	10.4	17.2
Without thrombolytic therapy	6.2	15.5	19.6

The highest number of hemorrhagic complications in patients of 75 years old and older is caused by the lability of the hemostasis system in elderly organism and its lower resistance to inhibitors than in a younger organism. These age features are partially conditioned by the atherosclerosis of blood vessels and

metabolic deviations in endothelium, partially by the age inadequacy of protein-synthetic function of hepatocytes including the decrease of the pool of coagulation factors and physiologic anticoagulants (C and S proteins) in hepatocytes. One more reason of hemorrhagic complications in elderly patients is the fact that the kidney ability of exclusion of diverse antithrombotic drugs and their metabolites from the circulatory system is

notably lower. [2]. It was marked, elderly patients frequently undergo complex medicated therapy and receive the remedies that can either increase the effect of anticoagulants and antiaggregants or decrease it. Therefore, the excessive amounts of antithrombotic drugs and their endogenic overdosage are frequently presented in elderly patients [2]. Thrombolytic therapy effectiveness in the group of patients of 75 years old and older did not differ dramatically from that of the group of patients of 60-74 years, though it was lower than in the group of patients of 59 years old and younger. The mortality rate in patients with acute coronary syndrome with the elevation of ST-segment decreases in all the 3 groups if the thrombolytic therapy is used. Although veracious results are confirmed only in the group of patients of 60-74 years old.

CONCLUSION

1.The structure of complications after the thrombolytic therapy in patients of 75 years old and older is the same as in younger patients. However, the percentage of hemorrhagic complications is significantly higher.

2. The effectiveness of thrombolytic therapy by ECG-signs in patients of 75 years and older are is reliably lower, than that of the youngest group of patients but relatively the same as in the group of the patients of 60-74 years old.

3. The administration of thrombolytic therapy reduces the lethality of the patients of 75 years and older.

Hence, taking into account the complications from thrombolytic therapy in patients of 75 years old, its effectiveness and lethality, thrombolytic therapy can be considered as a relatively safe and undoubtedly justified in geriatric patients.

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