A COMPARISON OF THE COURSE OF ACUTE CORONARY SYNDROMES (STEMI) IN HYPERTENSIVE AND NON-HYPERTENSIVE PATIENTS.

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BACKGROUND:

• During the infarction, blood pressure plays an important role, mainly in autoregulatory mechanisms. Under the influence of systolic pressure and reduced muscle tone in the ischemic area, fine vessels are not crimped, so that the ischemic area is not completely depleted of oxygen.

• Elevated blood pressure with accelerated heart rate in the early phase of acute myocardial infarction may be associated with excessive adrenergic stimulation or an indication of pre-existing hypertensive disease.

• The results of in-hospital mortality during STEMI with hypertensive versus normotensive patients are inconsistent so far.

• Multi-center studies have shown that hypertension is found in about 50% of patients after myocardial infarction, but its effect on coronary artery disease is not unambiguously assessed.

• The aim of work was to assess clinical conditions of hypertensive and non-hypertensive patients and to analyze factors affecting in-hospital mortality in these groups of patients.
METHODS:

• 366 patients were included in the group of STEMI patients, 250 men and 116 women.

• The average age was 62.9 (±11.5) years old.

• 234 patients (150 men, 84 women) had previously treated hypertension and 132 individuals (100 men, 32 women) did not report problems with hypertension when admitted to the hospital.

• The proportion of people with ACS-STEMI was significantly higher in people under than over 65 years of age.

• On the day of admission to the Cardiology Department, all ACS subjects were examined and blood pressure measurements, ECG and laboratory tests were made. Invasive cardiologists assessed critical coronary artery stenosis, qualified for angioplasty, and further decisions (e.g. CABG). In the following days of hospitalization, the clinical course of the disease was diagnosed in hypertensive and non-hypertensive subjects and echocardiography was performed (3-4 day), in-hospital mortality was assessed and factors of adverse outcomes were evaluated for patients with ACS-STEMI.

• Statistical analysis (Microsoft Excel, Statistica pl, SPSS)
RESULTS:

- The average age of HA-STEMI patients was significantly higher than NHA-STEMI patients (64.3±11.2 vs 60.3±11.9) (p<0.01)
- Women were significantly older than men in both groups (p<0.001; p<0.05)
- The time between the onset of infarct pain and arrival to the hospital did not differ in both groups
- BMI>25, cigarette smoking, hypercholesterolemia, diabetes, kidney disease, pulmonary oedema and atrioventricular block type III before admission to hospital occurred more frequently in HA-STEMI group; previous history of heart attack, PCI and CABG were more common for NHA-STEMI group
- HA-STEMI patients before ACS usually were treated with beta blockers and angiotensin-converting enzyme (ACE) inhibitors
- Ambulance treatment before ACS did not matter in both groups
- On the day of admission to the hospital tachycardia (HR>100/’) occurred more frequently in HA-STEMI group; location of infarction in ECG, arrhythmia and conduction disorders were irrelevant in both groups
RESULTS:

- Biological markers of myocardial necrosis did not differ in both groups of patients; urea was significantly higher in HA-STEMI patients.

- Critical coronary stenosis during coronary angiography in the NHA-STEMI group was more frequently associated with LCM and in the HA-STEMI group with Cx artery.

- During hospitalization cardiogenic shock occurred more frequently in HA-STEMI group.

- There was no statistically significant difference between echocardiography parameters, except for IVSD and PWS that were greater in the HA-STEMI group.

<table>
<thead>
<tr>
<th>Factors of adverse outcomes in STEMI patients during hospitalization</th>
<th>HA</th>
<th>NHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (&gt;65 years old)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Heart failure (&gt;2 class Killip-Kimball)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>AF</td>
<td>+</td>
<td>+</td>
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<tr>
<td>Stroke</td>
<td>+</td>
<td>-</td>
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<tr>
<td>VT/VF</td>
<td>-</td>
<td>+</td>
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<tr>
<td>WBC (morphology)</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>UREA</td>
<td>+</td>
<td>-</td>
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<tr>
<td>Creatinine</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Glucose</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>LVEF&lt;40%</td>
<td>+</td>
<td>-</td>
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<tr>
<td>2 critical arteries occlusions</td>
<td>+</td>
<td>-</td>
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</tbody>
</table>
CONCLUSIONS:

• In hypertensive patients, ACS-STEMI occurred later than in non-hypertensive patients, with women being significantly older than men.
• ACS-STEMI were more common in hypertensive men to 65 years old and in hypertensive women over 65 years old.
• In ACS-STEMI hypertensive patients had more critical occlusions in two coronary arteries, particularly in left circumflex coronary artery, frequent occurrence of pulmonary edema, atrioventricular block type III. Non-hypertensive patients had more critical occlusions in left main coronary arteries.