

Cardiovascular diseases and cardiac biomarkers

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DETERMINATION OF HSP 70 AS ONE OF THE IMPORTANT INPUTS IN THE DETECTION AND DEFINITION OF THE DEGREE OF MYOCARDIAL ISCHEMIC EVENTS

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BACKGROUND-AIM

Atherosclerosis induced myocardial ischemia should be as soon as possible confirmed in aim of further protocols. Oxidative stress, through various inflammatory events induces processes involved in repairing the damage. Determination of Heat shock proteins(Hsp)70, involved in this issue give useful data since they induce mechanisms that take part in protein remodeling so can repair the impaired myocardium integrity. Hypoxia and re-oxygenation alter the distribution of cardiac proteins through changes in mRNA so, cardiac myocytes try to protect themselves by regulating antioxidant proteins and stress proteins. Therefore, the determinations of Hsp70 antibodies indicate necrosis, but also witness the initiation of the repair processes of damage.

METHODS

Study involves group (200) patients suspected for AMI. Standard laboratory protocol was carried out for confirming or dismiss the AMI diagnosis including, photometric determination of cardiac enzymes, (CK, CKMB), MEIA principle for estimation of cardiac markers. Determination of concentration of Hsp70Ab was performed with ELISA technique.

RESULTS

Standard statistical analysis showed a positive correlation of Hsp 70 level and CRP with increase cTnT and cTnI values at patients with confirmed AMI (67% of patients). Also, we found an elevated level of Hsp70 in the majority of patients with AP/NSAP (96.7%) and in patients with pulmonary disease (100%). Level of Hsp 70 vs control group shows 15 fold increases at the patients with AP/NSAP, but more important is even 26fold increase at the patients with AMI. Results are significant in aspect of estimation of level of damage, according to some previous data that which detected the path of activation and transduction of the signals through different protein kinase pathological processes.

CONCLUSIONS

Our results and the prevalence of detected increased Hsp 70Ab at 67 % of patients with AMI testify of engagement of this proteins in cardiac proteins recovering processes. The higher prevalence in patients with AP speaks about the chronic condition at the patients and therefore our recommendation, supported by other data, is to monitor the level of these proteins in patients with AP in order to avoid unwanted, unfavorable outcomes for such patients.