

IDENTIFICATION OF TRANSTHYRETIN AND β 4-THYMOSIN AS POTENTIAL BIOMARKERS IN ACUTE CORONARY SYNDROME BY TWO INDEPENDENT METHODS, 2-DE/DIGE AND SELDI-TOF

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Acute myocardial infarction (AMI) is one of the leading causes of death in the world and remains a complex pathophysiologic process involving inflammatory, hemostatic and vascular processes. We employed two independent and complementary approaches, SELDI-TOF, and 2-DE/ DIGE in a first phase exploratory biomarker study to analyze modifications in the serum protein map during an acute coronary syndrome (ACS); It disclosed that the levels of two proteins, transthyretin (TTR; 14000 m/z) and acetylated- β 4-thymosin (4970 m/z) were significantly altered in acute coronary syndrome patients in comparison with healthy subjects. TTR was identified by 2-DE/ DIGE and SELDI-TOF and confirmed by Western blotting whereas β 4- thymosin was detected only by SELDI-TOF owing to its low molecular mass and confirmed by ELISA and Western blotting. Whereas TTR is involved in the transport of various biologically active compounds β 4- thymosin is essential for cardiomyocyte survival, cardioprotection and repair in the adult heart. Identification of both proteins could help in the understanding of the basis for allowing the diagnosis to be made at an earlier stage of the disease when the treatment is possible.