

A PROTEOMIC FOCUS ON THE ALTERATIONS OCCURRING AT THE HUMAN ATHEROSCLEROTIC CORONARY INTIMA AND MEDIA

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INTRODUCTION: Tissue proteomic studies on atherosclerosis have traditionally focused on whole artery extracts. Atherogenesis initiates within the intima and implies circulating inflammatory cells recruitment together with vascular smooth cells coming from the media. These events may affect the proteomic profile of the layers during atherosclerosis development.

METHODS: Coronary and radial (control) samples from bypass surgery and atherosclerotic and preatherosclerotic (control) coronaries from necropsy origin were immediately washed in saline and frozen embedded with OCT. Intima and media were isolated by Laser Microdissection and Pressure Catapulting (LMPC) with a Microbeam System. After an optimized protocol of protein extraction [1] samples were analyzed by saturation labeling DIGE. A subset of altered proteins was validated by immunohistochemistry (IHC) using additional coronary and radial specimens.

RESULTS: Thirteen proteins were found altered within atherosclerotic coronary intimas, while 12 were found in the correspondent media layers. Two of these proteins were validated by IHC on an independent group of arteries.

CONCLUSION: Coronary intima and media protein profiles vary with atherosclerosis progression. Here we describe a subset of proteins altered in atherosclerotic coronary layers that may have a potential utility as biomarkers of coronary atherosclerosis.