**High-sensitivity mass spectrometry analysis of pericardial fluid derived extracellular vesicles (EVs)**

Complex immunological and proteomic characterization of pericardial fluid extracellular vesicles were performed through our cooperation. We compared the microvesicle (MV) fraction of pericardial fluid characterized by multicolor flow cytometry of 4 well-characterized patient groups, including coronary artery bypass graft patients (acute or elective grafting) and transplanted patients (donors and recipients). Isolated MV and exosome fractions of 3 samples per patient groups were used for mass spectrometry analysis. Uniprot and STRING data bases and Funrich program were used for functional enrichment and network analysis. Systematic analysis was carried out on the basis of conventional medical parameters (laboratory parameters, inflammatory markers, computer tomography) and our results.

We can evaluate our results from both technical and physiological point of view: 1) Currently there is no methodological recommendation for the MS analysis of pericardial fluid derived EVs. Our work resulted in conceiving correct recommendations for the sample preparation of pericardial fluid EVs for MS analysis (manuscript is under preparation) 2) From pathophysiological point of view: a) we characterized the pericardial fluid EVs on the basis of their cellular origin; b) we performed the MS analysis of pericardial fluid MVs and exosomes; c) we created a complex clinical database; d) we began the complex analysis of our data using bioinformatics.