Increased myocardial expression of angiopoietin-2 in patients undergoing urgent surgical revascularization for acute coronary syndromes

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Résumé en anglais
BACKGROUND: Myocardial ischemia triggers the expression of multiple angiogenic factors including vascular endothelial growth factor and its receptors. However, vascular endothelial growth factor does not act in isolation. OBJECTIVE: To identify other genes important in the angiogenic response to clinically relevant myocardial ischemia. METHODS AND RESULTS: Paired intraoperative biopsies of ischemic and nonischemic myocardium were obtained from 12 patients with acute coronary syndromes (ACS) undergoing urgent coronary artery bypass graft surgery. Real-time polymerase chain reaction demonstrated significant upregulation of angiopoietin-2 (Ang-2) in ischemic myocardium, to a greater extent than other classical angiogenic factors. Microarray gene profiling identified Ang-2 to be among the top 10 differentially upregulated genes, in addition to genes involved in inflammation, cell signalling, remodelling and apoptosis. CONCLUSIONS: The present document is the first report of microarray analysis of patients with ACS, and supports an important role for Ang-2 in the angiogenic response to severe ischemia in the human heart. Common gene expression patterns in ACS may provide opportunities for targeted pharmacological and cellular intervention.

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