

CHARACTERISATION OF INTEGRIN CONTENT IN HUMAN NORMAL AORTIC VALVES AND IN VALVES AFFECTED BY CALCIFIC AORTIC STENOSIS

MAŁGORZATA PRZYBYŁO¹, EWA STEPIEŃ², ROMAN PFITZNER³, ANNA LITYŃSKA¹ and JERZY SADOWSKI³

¹Department of Animal Physiology, Institute of Zoology, Jagiellonian University, Ingardena 6, Kraków, ²Laboratory for Molecular Cardiology, John Paul II Hospital, Prądnicza 80, Kraków, ³Department of Heart and Cardiovascular Surgery, Institute of Cardiology, Collegium Medicum, Jagiellonian University, Prądnicza 80, Kraków, Poland

Integrins, a family of membrane receptors that play a fundamental role in the mediation of cell interactions, consist of a heterodimer of α and β chains linking cell-cell, cell-ECM and cell-cytoskeleton contacts. In the adult heart, integrins are selectively expressed in response to their immediate cellular environment. The adaptability of cells to regulate their integrin protein content is thought to be crucial for the cell function in development, disease and possibly ageing. The aim of the present study was the detection of β_1 , β_4 , α_2 and α_3 subunits in the material isolated from normal aortic valves and those affected by calcific aortic stenosis.

Seven pathological valves were dissected from patients undergoing elective valve replacement for calcific aortic stenosis. The control group comprised seven recipient valves. To extract proteins, each frozen valve was divided into pieces, sonicated, and centrifuged. Protein concentration was determined according to Bradford. Valve proteins (50 μ g) were separated by SDS-PAGE and transferred to a PVDF membrane. The blots were blocked in TBS/Tween with 1% BSA. Next, membranes were incubated with specific mAbs for β_1 , β_4 , α_2 and α_3 subunits, and then incubated with alkaline phosphatase coupled antimouse or antirabbit Ig.

The integrin subunits under study were detected both on normal and pathological aortic valves. The relative quantity of integrin subunits on calcific aortic stenosis valves was greater than that on normal valves.

This work was supported by KBN Grant No. 6 P05A 06921 and by Collegium Medicum J. U. Grant No. CR-72/2002.