

Expression of uPA, tPA, and PAI-1 in Calcified Aortic Valves

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Abstract : Our physiopathological assumption is that u-PA, t-PA, and PAI-1 are released by calcified aortic valves and play a role in the calcification of these valves. Sixty-five calcified aortic valves were collected from patients suffering from aortic stenosis. Each valve was incubated for 24 hours in culture medium. The supernatants were used to measure u-PA, t-PA, and PAI-1 concentrations; the valve calcification was evaluated using biphotonic absorptiometry. Aortic stenosis valves expressed normal plasminogen activators concentrations and overexpressed PAI-1 (u-PA, t-PA, and PAI-1 mean concentrations were, resp., $1.69 \text{ ng/mL} \pm 0.80$, $2.76 \text{ ng/mL} \pm 1.33$, and $53.27 \text{ ng/mL} \pm 36.39$). There was no correlation between u-PA and PAI-1 ($r = 0.3$) but t-PA and PAI-1 were strongly correlated with each other ($r = 0.6$). Over expression of PAI-1 was proportional to the calcium content of the AS valves. Our results demonstrate a consistent increase of PAI-1 proportional to the calcification. The over expression of PAI-1 may be useful as a predictive indicator in patients with aortic stenosis.

Keywords : aortic valve, PAI-1, tPA gene, uPA gene

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020