CORONARY VASOMOTOR DYSFUNCTION INDICATES REMODELING TYPE OF EPICARDIAL VASCULOPATHY AND MICROVASCULOPATHY IN BIOPSIES OF CARDIAC TRANSPLANT RECIPIENTS

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Background: Coronary vasomotor dysfunction precedes the development of vasculopathy after heart transplantation (HTx). Longitudinal analysis of vasomotor function in epicardial vasculopathy and microvasculopathy of de novo HTx recipients has not been performed as yet.

Methods: In 78 patients vasculopathy was assessed prospectively by coronary angiography (ISHLT classification; remodeling type and peripheral obliterations according to the Task Force for Thoracic Organ Transplantation of the German Cardiac Society), intravascular ultrasound, flow velocity testing (acetylcholine, adenosine) and in biopsy at 4 weeks, 1 year and 3 years post-transplant.

Results: Endothelial dysfunction correlated with peripheral obliterations at 1-year follow-up (p=0.006). Elevated baseline flow velocities and flow velocities after NTG indicated negative remodeling (26±2 vs. 22±1 cm/s; p=0.029 and 20±2 vs. 16±1 cm/s; p=0.035) and progressive microvasculopathy (27±2 vs. 22±1 cm/s; p=0.022 and 21±3 vs. 16±1 cm/s; p=0.046) at 1 year post-transplant. CFR was decreased in patients with high-grade vasculopathy (ISHLT classes 0-III: 2.9±0.1 vs. 2.4±0.1 vs. 1.8±0.1 vs. 1.9±0.6; p=0.017), negative remodeling (2.5±0.2 vs. 3.0±0.1; p=0.015) or peripheral obliterations (2.6±0.1 vs. 3.1±0.1; p=0.013) at 1 year post-transplant.

Conclusions: We conclude that negative remodeling, peripheral obliterations and microvasculopathy are likely to be associated with coronary vasomotor dysfunction and should be considered routinely in HTx recipients.