

Myocardial Ischemia at Rest in Asymptomatic 75% Coronary Artery Stenosis - Indication of Percutaneous Coronary Intervention

Purpose: According to the traditional theory of coronary artery stenosis (CAS), 75% coronary artery stenosis (CAS) does not cause myocardial ischemia (MI) at rest, and echocardiographically the strain value is decreased in 75% CAS area in asymptomatic patients at rest. We examined whether 75% CAS caused MI using longitudinal post-systolic index value (PSI) of patients who were asymptomatic and had 75% CAS by coronary artery angiography (CAG).

Method: Forty-seven lesions of 75% CAS in asymptomatic patients with normal left ventricular (LV) wall motion in B-mode imaging and with negative results of traditional stress tests, were enrolled in this study. Among 47 lesions, 26 underwent percutaneous coronary intervention (PCI gr.). The PSI of CAG and post-PCI at rest were examined at two-week intervals until PSI became improved and stable. Twenty-one lesions underwent medical intervention (Non-PCI gr.). PSI of CAG and six months after CAG were examined

Results: PCI gr: The PSI was $-18.36 \pm 17.88\%$ at CAG and $-0.01 \pm 0.03\%$ post-PCI ($p < 0.001$). It was significantly improved due to resolution of CAS by PCI. Non-PCI gr: The PSI was $-18.94 \pm 18.53\%$ at CAG to $-20.73\% \pm 19.29\%$ six months later. The value was not improved.

Conclusion: The changes in PSI after PCI proved that 75% CAS caused MI at rest. This ischemic situation was not improved by medical intervention of six months duration.

Based on these results we concluded that patients with 75% CAS should receive PCI to certainly regain normal LV wall function, even though they may pass traditional stress tests and appear asymptomatic.