

NONSIGNIFICANT DIFFERENCE IN SEGMENTAL LEFT
VENTRICULAR DYSFUNCTION BETWEEN TRIPLE 50% AND A
SINGLE 75% STENOSIS OF THE SAME CORONARY ARTERY

[Purpose] We have stressed the importance of a single 50% coronary artery stenosis (CAS) on segmental left ventricular wall (SLVW) dysfunctions. This study analyzed the influences of multiple 50% CASs of the same coronary artery (CA) on SLVW functions.

[Method] 112 patients (pts) with a single and multiple 50% CAS (69pts \times 1, 52pts \times 2, 34pts \times 3) and 44 pts with 44 CAs of a single 75% CAS were employed. SLVW functions were estimated by echocardiographical strain rate (SR). Systolic function was evaluated by Z variable: $Z = 4.91 + 1.02 \times (100\text{-ms SR value}) + 1.23 \times (200\text{-ms SR value}) - 0.46 \times (\text{minimum SR value}) + 4.83 \times (\text{mean SR value})$. Diastolic function was evaluated by E/E variable: $E/E = \text{peak E/E time } \%/ \text{sec}^2$ (E time: time from aortic valve closure to peak E).

[Results] The Z values were : $50\% \times 1 = -0.02 \pm 1.60$, $50\% \times 2 = 0.78 \pm 1.26$, $50\% \times 3 = 1.55 \pm 0.47$ and $75\% \times 1 = 1.81 \pm 0.62$. There were significant differences in SLVW Z values between $50\% \times 1$, $50\% \times 2$ and

75%×1 ($p < 0.0001$). No significant difference was observed between 50%×3 and 75%×1 ($p = 0.07$). The E/E values were : 50%×1 = 10.39 ± 6.33 , 50%×2 = 8.94 ± 4.63 , 50%×3 = 7.39 ± 5.62 and 75%×1 = 7.09 ± 3.64 . There were significant differences in SLVW E/E values between 50%×1, 50%×2 and 75%×1 ($p < 0.0001$). No significant difference was observed between 50%×3 and 75%×1 ($p = 0.99$).

[Conclusion] The results of this study indicate triple nonsignificant 50% CASs influences systolic and diastolic dysfunction of SLVW the same as a single significant 75% CAS.