

## Nicorandil administration shows cardioprotective effects in patients with poor TIMI and collateral flow as well as good flow after AMI

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**Background:** Nicorandil (NCR) has been reported to have cardioprotective effects in patients with AMI. And collateral flow and TIMI flow are also important determinants of final salvaged myocardium in patients with AMI. There is no evidence as to whether TIMI or collateral flow modifies the cardioprotective effects of NCR in patients with AMI. **Methods and Results:** We studied 68 initial AMI patients without restenosis which was defined as 50% diameter reduction of the intervention site in the chronic period. On initial CAG, 41 patients with poor flow (collateral: Rentrop 0 or 1 and TIMI 0 or 1) were NCR/Non-NCR = 20/21. Twenty-seven patients with good flow (collateral: Rentrop 2 or 3 or TIMI 2 or 3) were NCR/Non-NCR = 13/14. NCR was administered intravenously (4 mg) via intracoronary injection (2 mg) or continuously (4 mg/h).  $^{99m}\text{Tc}$ -tetrofosmin (TF) and  $^{123}\text{I}$ -BMIPP SPECT were performed in the subacute and chronic (6 Mo) periods. In 20 SPECT segments, summed defect scores (TDS) and regional wall motion (WMS: -1 = dyskinesia ~ 4 = normal) of AMI segments using TF-QGS were estimated. In poor flow patients, the following values for NCR patients were higher ( $p < 0.05$ ) than for Non-NCR patients in the improvement degree of TDS (BMIPP) (NCR:  $6.5 \pm 3.9$  vs. Non-NCR:  $4.0 \pm 3.4$ ), the improvement degree of TDS (TF) (NCR:  $5.7 \pm 4.6$  vs. Non-NCR:  $2.2 \pm 4.6$ ), and delta WMS (NCR:  $1.4 \pm 1.1$  vs. Non-NCR:  $0.9 \pm 1.0$ ). In good flow patients, the following values for NCR patients were better ( $p < 0.05$ ) than for Non-NCR patients in TDS (BMIPP) (subacute) (NCR:  $9.9 \pm 5.2$  vs. Non-NCR:  $16.5 \pm 10.4$ ) and (chronic) (NCR:  $5.1 \pm 5.2$  vs. Non-NCR:  $12.4 \pm 8.5$ ), WMS (subacute) (NCR:  $1.7 \pm 1.3$  vs. Non-NCR:  $1.0 \pm 1.0$ ), and WMS (chronic) (NCR:  $3.0 \pm 1.5$  vs. Non-NCR:  $2.1 \pm 1.3$ ). **Conclusion:** We conclude that the cardioprotective effects of nicorandil administration are observable in both AMI patients with poor collateral and TIMI flow and good flow before reperfusion therapy.

**Key words:** nicorandil, cardioprotective effect, AMI