

Levodimendan as a treatment Option for Cardiac Hibernation post Coronary Revascularization

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Cardiac hibernation might prevent the improvement of myocardial performance after coronary revascularization in ischemic cardiomyopathy. Calcium homeostasis might be disturbed in hibernation. Levosimendan is a novel drug indicated for acute decompensated heart failure. It offers calcium sensitizing and potassium channel opening effects. These effects may improve function in hibernating myocardium.

We evaluated the efficacy of the drug in patients with akinesis of non-scar ischemic myocardium after percutaneous coronary intervention (PCI) procedure.

Fourteen consecutive patients with severely reduced LV function and akinesis of myocardial segment have been treated with PCI. An echocardiography was done before, and 24 hours after the procedure. Five patients showed improved of regional wall motion and were excluded from the study. In nine patients (2 females, age $77.4 \text{ y} \pm 15.6$ (57-84) no improvement was seen on the first day post PCI and were treated with Levosimendan (beginning with 0.05 microgram/kg/min and up to 0.2microgram/kg/min over 24 hours). A third echocardiographic examination was performed 24 hour following cessation of Levosimendan and was compared to the baseline echocardiography. Overall significant improvement was observed in LVEF (26.8 ± 5.5 vs. 33.5 ± 2.4 $p=0.03$ T-test). Of note, only six patients responded to the therapy (EF 25.2 ± 5.1 vs. 32.2 percent, $p=0.004$) and three did not (EF 34 vs. 35%). The responders showed improvement mainly of regional wall motion abnormality correlating to the previously blocked coronary artery. All patients were discharge from the hospital in stable condition.

Conclusion: Levosimendan is an important treatment option for severely reduced LV function with hibernation post revascularization for ischemic cardiomyopathy