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Withdrawal of beta-blockers and ACE inhibitors after left ventricular systolic function recovery in patient with dilated cardiomyopathy randomized control trial

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Introduction: recovery of left ventricle (LV) systolic function with normalization of ejection fraction (LVEF) occurs in 10 - 27% of patients with 80% maintaining recovery. However, the need for medical therapy after recovery is often questioned. Previous randomized studies of treatment withdrawal were small, not selected for non-ischemic dilated cardiomyopathy (DCM) and had a reference of improved or recovered EF to > 40% or > 10% change from LVEF at time of diagnosis. Hypothesis: In patients with DCM with recovery of the LV systolic function to an EF (>50%), medical therapy withdrawal is possible without rebound LV systolic dysfunction. Method: This was a pilot randomized control open-label trial with 2:1 randomization for withdrawal of b-blockers and ACE inhibitors in patients with recovered LV systolic function. Patients’ medication discontinuation occurred in 2 phases with a six-month interval and patients were followed for one year. The primary endpoint was LVEF reduction (< 40%). Results: There were 22 patients (10 females) enrolled. The mean age was 60 ± 12y. The mean LVEF at enrollment was 58 ± 5% with no significant difference in the mean LVEF in both groups. Sixteen patients were assigned to the withdrawal group and 6 assigned to the control group. The primary endpoint occurred in 31% of the withdrawal group compared to none of the control group. The rate of 1ry outcome after withdrawal of medical therapy was 19%, p-value 0.15. The mean LVEF at 1 year for the treatment withdrawal group was 46.8 ± 12% and control 55 ± 6%, p-value 0.15. In the medication withdrawal group, the mean LVEF reduction was 10.6 ± 11% and the difference between the mean LVEF at enrollment and at 1 year was 10.6 ± 11% with 95% CI (4.6,16.49), p-value 0.0017. Conclusion: In DCM patients with recovery of LV systolic function, we observed worsening of LVEF after withdrawal of b-blockers and ACE inhibitors.