

MEETING ABSTRACT

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Metabolic manipulation in Dilated Cardiomyopathy: assessing the role of trimetazidine

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Background/Introduction

Altered substrate metabolism plays an important role in pathophysiology of heart failure (HF). Optimization of myocardial energy metabolism with metabolic modulators like trimetazidine (TMZ) allows more efficacious energy production.

Aims/Objectives

Although TMZ has been studied extensively in patients with ischemic HF, more data are needed on its role in dilated cardiomyopathy (DCM).

Method

100 patients of DCM (mean age 47.7 yrs, NYHA class 2.17, LVEF 27.3%) were randomized to TMZ (20 mg tid, n = 50) vs conventional therapy (n = 50). Functional status, BNP & echocardiographic parameters were assessed at 3-6 months.

Results

Baseline characteristics were comparable among the two groups. At three months, patients on TMZ had significant improvement in mean NYHA class (2.25 vs 1.85, $p = .001$), 6 min walk test (349.7 vs 402 m, $p = 0.001$), LVD-36 score (25.5 vs 21, $p = .001$) and fall in BNP (744.7 vs 248.3 pg/ml, $p = .001$). This was accompanied by significant improvement in indexed LV end-systolic (LVESV, 87.1 ± 27.5 vs 78.5 ± 24.9 ml/m², $p = 0.0001$) and LV end-diastolic volumes (LVEDV, 117.6 ± 29.3 vs 110.9 ± 27.4 ml/m², $p = 0.0001$) and LVEF (27 vs 30.9%, $p = .0001$) along with reduction in LV wall stress ($90.2 \pm$

18.9 vs 71.1 ± 13.2 dyn/cm², $p = 0.0001$). Other echocardiographic parameters also improved after three 3 month of TMZ (E/A ratio, E/A VTI, Myocardial performance index) and TDI parameters (E/e'_{septal}, and E/e'_{lateral}). Patients not on TMZ had no significant change in NYHA Class, LVD-36 scores, LV volumes or LVEF at 3 months although BNP levels & LV wall stress reduced, albeit to a lesser extent than TMZ. Patients on TMZ had further improvement in NYHA Class, 6 min walk test, BNP levels & all echocardiographic parameters at 6 months.

Discussion/Conclusion

Metabolic modulators like trimetazidine have a potential role to play in altering LV remodelling and improving LV function in DCM. In this study, benefit was noted by 3 months with further improvement at 6 months.

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