

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,  $87.1 \pm 27.5$  vs  $78.5 \pm 24.9$  ml/m<sup>2</sup>,  $p = 0.0001$ ) and LV end-diastolic volumes (LVEDV,  $117.6 \pm 29.3$  vs  $110.9 \pm 27.4$  ml/m<sup>2</sup>,  $p = 0.0001$ ) and LVEF (27 vs 30.9%,  $p = .0001$ ) along with reduction in LV wall stress ( $90.2 \pm$

$18.9$  vs  $71.1 \pm 13.2$  dyn/cm<sup>2</sup>,  $p = 0.0001$ ). 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'<sub>septal</sub>, and E/e'<sub>lateral</sub>). 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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