HIGH DOSE ALLOPURINOL REDUCES LEFT VENTRICULAR MASS IN PATIENTS WITH ISCHEMIC HEART DISEASE

Objectives
The aim of this study was to ascertain if high dose allopurinol regresses left ventricular mass (LVM) in patients with ischemic heart disease (IHD).

Background
LV hypertrophy (LVH) is common in patients with IHD including normotensive patients. Allopurinol, a xanthine oxidase inhibitor, has been shown to reduce LV afterload in IHD and therefore may also regress LVH.

Methods
A randomised double-blind, placebo controlled, parallel group study was conducted in 66 patients with IHD and LVH, comparing 600mg/day allopurinol vs. placebo therapy for 9 months. The primary outcome measure was change in LVM, assessed by cardiac MRI (CMR). Secondary outcome measures were changes in LV volumes by CMR, changes in endothelial function by flow-mediated dilatation (FMD) and arterial stiffness by applanation tonometry.

Results
Compared to placebo, allopurinol significantly reduced LVM (allopurinol -5.2 ±5.8g vs. placebo -1.3 ±4.48g, p=0.007) and LVM index (LVMI) (allopurinol -2.2 ±2.78g/m^2 vs. placebo -0.53 ±2.5g/m^2; p=0.023). The absolute mean difference between groups for change in LVM and LVMI was -3.89g (95% CI -1.1 to -6.7) and -1.67g/m^2 (95% CI -0.23 to -3.1) respectively. Allopurinol also reduced LV end-systolic volume (allopurinol -2.81 ±7.8mls vs. placebo +1.3 ±7.22mls; p=0.047), improved FMD (allopurinol + 0.82% ±1.8% vs. placebo -0.69% ±2.8%; p= 0.017) and Augmentation Index (allopurinol -2.8 ±5.1% vs. placebo +0.9 ±7 %; p=0.02).

Conclusions
High dose allopurinol regresses LVH, reduces LV end-systolic volume and improves endothelial function in patients with IHD and LVH. This raises the possibility that allopurinol might reduce future cardiovascular events and mortality in these patients.