Is there a relationship between LAVi and routine ECG parameters in hypertrophic cardiomyopathy?

The Newcastle upon Tyne Hospitals NHS Foundation Trust

Newcastle University

Brandon Tillson*[1], Intercalating (MRes Cardio Science), b.tillson1@newcastle.ac.uk
Dr Stephen Lord[2], Dr Tim Irvine[2], Prof Chris Eggett[1,2]
Newcastle University[1], Freeman Hospital[2]

Background

Pilot project informing statistical power, assessing the relationship between left atrial volume and ECG abnormalities in hypertrophic cardiomyopathy

Method

- 90 consecutive adult patients derived from Freeman Hospital echo database between 8/18 to 04/23
- Baseline characteristics in **figure 1**
- ECGs assessed manually by one investigator (QRSd to nearest 5ms)
- Atrial dysrrhythmia defined as AF, AFL, and atrial pacing
- Sinus rhythm includes atrial sensing
- TWI not considered if in III, aVR and V1

Age median [IQR]	64 [50.1-75]
Sex male% (n)	61.1 (55)
BMI median [IQR]	28.4 [25.3-32.4]
LAVi available yes% (n)	80 (72)
LAVi median [IQR] ml^3m^{-2}	43 [27.8-63]
ECG available yes% (n)	63.3 (57)
QRS duration median [IQR] ms	85 [80-120]
Atrial rhythm % (n)	SR, 77.2 (44); Atrial dysrrhythmia, 22.8 (13)
Ventricular conduction % (n)	Normal, 70.2 (40); NSIVCD, 5.3 (3); RBBB, 14 (8); LBBB, 1.8 (1); VP, 1.8 (1)
T wave inversion % (n)	45.3 (26)
Pathologic Q waves % (n)	12.3 (7)

Figure 1: Baseline population characteristics

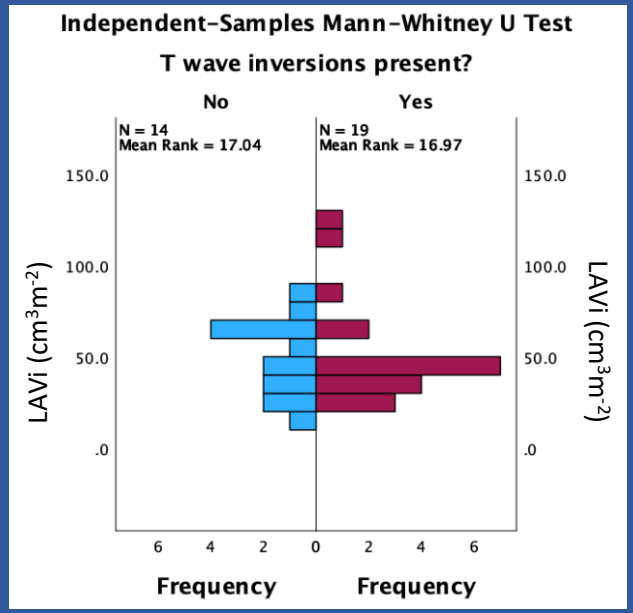

Figure 2: No association between LAVi and TWI

Results

- LAVi not normally distributed
- Correlation between QRSd and LAVi found NS [R=-0.099, P=0.266]
- Association between presence of TWI and LAVi by Mann-Whitney U test (**figure 2**) found NS [p=0.986]
- Logistic regression all NS: TWI alone; TWI + QRSd; TWI + QRSd + age + BMI

Conclusions

- No statistically significant associations found between LAVi, QRSd and TWI
  Inadequate statistical power for subgroup analysis (e.g. localising TWI)
- We're planning a larger study with subgroup analysis, using E/A and strain (more specific for diastolic dysfunction)
- Limitations are small sample size, no formal sample method and no subgroup analysis