

24. Gender, Ethnic Difference in Arrhythmic Risks and Prognosis in Patients With Non-Ischaemic Cardiomyopathy

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Body

Background: Heart failure carries a significant mortality and the progressive improvement of the therapeutic regimens in modern era also improve mortality significantly. The mortality benefits of Automatic Intracardiac Defibrillator (AICD) in non-ischaemic cardiomyopathy patients is less clear. Subgroup analysis of Definite trial showed that female patients favoured medical treatment. Ethnic difference in arrhythmic risk also not known.

Methods: 447 patients with heart failure and reduced left ventricular ejection fraction (LVEF <40%) due to non-ischemic cardiomyopathy, all have coronary angiogram to exclude significant coronary artery disease (>70% stenosis).

Continuous variables were compared by Student t tests and categorical variables compared by use of the Fisher exact test. Composite endpoints include death, sudden cardiac death (SCD), ventricular arrhythmias (VA) and hospitalisations for heart failure. $P < 0.05$ was denoted as statistical significant.

Results: Mean age 63.07 ± 14.19 years, male patients 314 (70%), 360 Chinese and 87 non-chinese. Mean age of male and female patients were 61.21 ± 13.65 and 67.46 ± 14.52 years old respectively. Patients with diabetes mellitus 38%, hypertension 76%, atrial fibrillation 38%, stroke 9%. LDL 2.78 ± 1.04 mmol/l, HbA1c $6.56 \pm 1.62\%$, baseline creatinine 98.43 ± 37.27 μ mol/l. Patients taking ivabradine 9%, b-blocker 88%, Angiotensin inhibitors/Angiotensin Receptor Blocker 66%, Sacubitril/ Valsartan 26%, spironolactone 57%, SGLT-2 inhibitor 9%.

Mean follow-up duration of 6.18 ± 4.16 years. There were 61 deaths (13%, 2.20% death/ year, 20 females and 41 males). 38 SCD, 22 VA, 218 hospitalisation for heart failure

There was a significant increase in LVEF from 24.88 ± 8.17 to $39.92 \pm 13.88\%$ and 22.05 ± 8.52 to $36.14 \pm 8.17\%$ in female and male patients respectively ($p=0.023$). 190 patients (43%) have LVEF increased to or more than 35%.

40 patients (9%) received device therapy (AICD and Cardiac resynchronization therapy), 19% secondary prevention, 81% for primary prevention. The median time from diagnosis of NICMP to appropriate device therapy for VT/ VT storms was 85.5 months (interquartile range 35-131). 18/21 patients (86%) noted to have appropriate therapy for VT/ VT storms were males. HR for males 8, 95% CI (1.06, 60.34, $p=0.044$). All the device therapy occurred in patients with LVEF < 35%. There is also gender difference in composite endpoints ($p=0.0022$)

LVEF improved from 23.31 ± 8.67 to 38.10 ± 15.20 and 21.63 ± 7.57 to $33.74 \pm 12.92\%$ respectively ($p=0.014$) in Chinese and non-Chinese patients respectively. There are no significant difference in the VA or primary composite endpoints.

Conclusion: The study showed progressive improvement of the therapeutic regimens improve mortality by improving LVEF regardless of gender or ethnicity. The arrhythmic risk, composite endpoints are higher in male than female patients. There is no ethnic difference in clinical endpoints.

Clinical Implications: Gender difference in arrhythmic risks in NICMP and hence in risk stratification