THE LIVERPOOL EXPERIENCE OF ALCOHOL SEPTAL ABLATION (ASA) IN HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY (HOCM): 12 YEAR FOLLOW UP

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doi:10.1136/heartjnl-2013-304019.153

Introduction ASA is an established treatment for symptomatic HOCM patients. Due to the relatively low numbers appropriate for ASA evidence is limited to case series, this is the largest reported UK group.

Methods Patients referred to Liverpool Heart and Chest Hospital for consideration of ASA from August 1999 to December 2012 were reviewed. All patients had resting or stress LVOT gradient ≥ 50 mm Hg. All patients were trialled on β -blockers and/or verapamil prior to ASA. Only those taken to the lab with the intention of delivering alcohol were included. A mean follow up period of 4.2 (± 3.33) years was observed, range 0.13–12.29.

Results Procedure: 91 patients were identified, mean age 60.8 (± 14.4) years. 5 could not receive alcohol due to limitations identifying and instrumenting appropriate septal vessels. 17 (20%) patients required a second procedure, 7 (8%) required a third. Alcohol was not delivered in 17 procedures. 173 septal vessels were explored with echo contrast, 123 subsequently received alcohol. The LAD was the parent artery for 92% of treated septals, Cx in 2%, diagonal in 2%, LMS in 3%. Mean of 2.05 ml (± 0.98) alcohol was injected. CK-MB was available in 82 procedures, mean peak value was 152.3 (± 136.6) ng/dl.

Complications Heart block requiring new PPM was seen in 16/76 (21%). There were no procedural deaths. One inpatient death was reported following haemodynamic compromise as a complication

of pacemaker implantation post ASA. Distal infarction was seen in one patient, pericardial effusion without tamponade was seen in one patient, neither required further treatment. One episode of sustained VT was seen 2 weeks after ASA requiring cardioversion. Symptomatic response: 84 patients had satisfactory follow up data. Mean pre-procedural NYHA was 2.79 (± 0.47), improving to 1.95 (± 0.84) after ASA ($p < 0.0001$). 60 (71.4%) patients improved by ≥ 1 NYHA category, 22 (26%) reported no change, 2 (2%) deteriorated. 24 patients had pre- and post-ASA CPEX testing with RER > 1.1 . Peak VO₂ increased from 18.9 to 20.09 ml/min/kg ($p = 0.018$), exercise time increased from 568 to 615 s ($p = 0.046$). Echocardiogram: 77 patients had satisfactory echo data for LVOT gradient assessment. Mean pre-ASA peak resting gradient was 82.9 (± 51.2) mmHg, median 80, range 0–237 mm Hg. Mean post-ASA peak gradient was 16.8 (± 34.7) mmHg ($p < 0.0001$), median 6, range 0–240 mm Hg. SAM was improved or abolished in 43/69 (62%) of all patients with available data, 38/55 (69%) of those with final resting gradient < 20 mm Hg, 3/6 (50%) of those with gradient 20–50 mm Hg, and 2/8 (25%) of those with resting gradient > 50 mm Hg.

Arrhythmia Internal rhythm monitoring was available in 35 patients (16 ICD for 1st and 2nd prevention, 19 PPM) over a mean of 3.74 (± 3.15) years. No appropriate ICD therapy was delivered. NSVT was seen in 9 patients, 7 had 1 episode < 15 beats, 1 had 4 episodes < 15 beats, 1 had 36 episodes < 15 beats, she had multiple episodes NSVT before ASA. Survival: 14 of those that received alcohol died. None suffered sudden cardiac death. 6 suffered cardiac related death (one as inpatient), congestive cardiac failure in 5. Non-cardiac death was reported in 8.

Conclusions ASA provides good resolution of symptoms and LVOT gradients in most. It is generally a safe procedure. There is room for improvement in ASA. Those unable to receive treatment via trans-coronary methods need an alternative.