Conclusion Simple clinical criteria can be used to identify low-risk patients suitable for very early discharge 48 h following uncomplicated successful primary PPCI. With only a small percentage of complications occurring after the first 24 h, discharge after 24 h may be safe and warrants further study.

049 THE ROLE OF THE NEURAL NETWORKS IN IDENTIFICATION AND ABLATION OF PULMONARY VEIN ECTOPIC TRIGGERS

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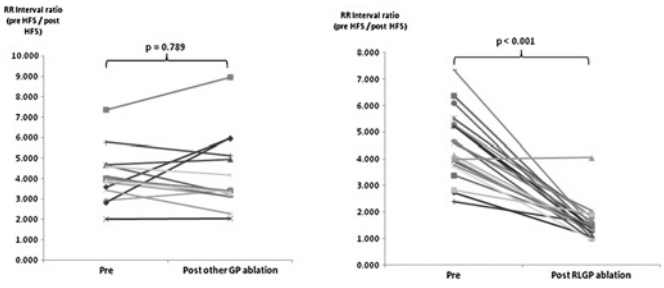
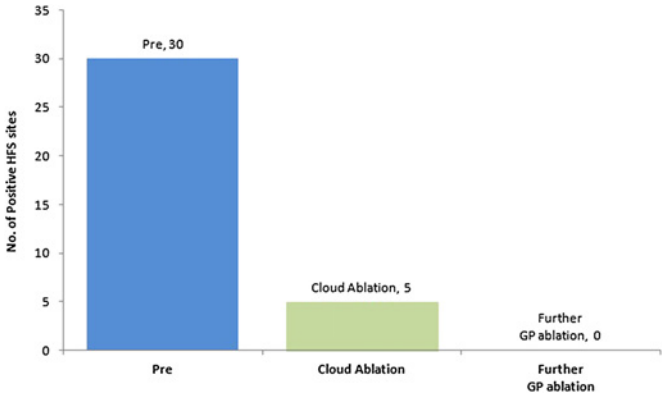
Introduction The cardiac neural network comprises ganglionated plexi (GP) adjacent to each pulmonary vein (PV) which can trigger AV block and PV ectopy. We hypothesised that AV block in response to GP stimulation is mediated through the right lower GP (RLGP) and could be abolished by ablation of the RLGP, whereas a local PV ectopy response could be abolished by selective local GP ablation.

Methods and Results 10 patients undergoing left atrial (LA) ablation with autonomic modification were recruited. Continuous HFS was delivered endocardially at presumed GP sites using a Grass Stimulator (20 Hz, 10 ms pulse duration, 10 V). GP sites with connections to the AV node (producing AV block) were marked on LA geometry. RLGP group (N=5) had RF ablation of RLGP and 2 of 15 sites remained positive ($p<0.001$) demonstrating that ablation of the RLGP can disrupt the neural connections to the AV node. The other group (N=5) had RF ablation of non-RLGP sites followed by HFS retesting of all previously positive unablated sites. All 19 unablated GP sites were positive after ablation of target the GP site indicating that the neural connections to the AV node remained intact. A further 18 patients in sinus rhythm at the time of AF ablation were recruited. Short bursts of HFS (12 V, 50 Hz, 10 ms pulse width), synchronised to local refractory period, were delivered at presumed GP sites during fixed rate pacing. Positive sites initiating PV ectopy were recorded on the LA geometry and presumed to have PV connections. In a control group (N=3) to check reproducibility, 10 positive sites were identified and all 10 remained positive following catheter relocation and retesting. In the PVI group (N=8), 36 sites were positive, PVI was performed in all four veins without targeting GP sites during ablation. No sites were positive on retesting proving neural connections to the PV could be disrupted by ablation between the GP and PV. Finally in the GP ablation group (N=7), 29 sites were positive, two patients remained in AF, therefore further testing was not possible. RF ablation was performed around positive site and on retesting, five of 27 sites were positive. After additional RF ablation at these sites, no further ectopy could be initiated on retesting. This indicated that the GP connections into PVs could also be rendered ineffective by GP ablation.



Abstract 049 Figure 1 Effect of other GP site ablation on RR interval change following HFS at distant GP sites. Effect of RLGP ablation on RR interval change following HFS at distant GP sites.

Conclusions Our study shows that neural inputs from LA GPs act on the AV node via the RLGP "gateway" and if AV block is used to identify GP sites for autonomic modulation, intact connections via the RLGP are required. We propose using synchronised HFS to identify and ablate GP sites initiating ectopic firing from the PV, as it only requires intact local connections to the PV. PVI acutely prevents this ectopic activity, possibly by transecting neural inputs to the veins. However, reconnection of PVs is common and RF ablation of the GP site alone may prevent ectopic firing within PVs.



Abstract 049 Figure 2 Number of sites initiating PV ectopy before and after intervention in the GP ablation group.

050 AUTOMATED ANALYSIS OF ATRIAL DELAYED ENHANCEMENT CARDIAC MRI CORRELATES WITH VOLTAGE, AF RECURRENCE POST-ABLATION, AND HIGH STROKE RISK

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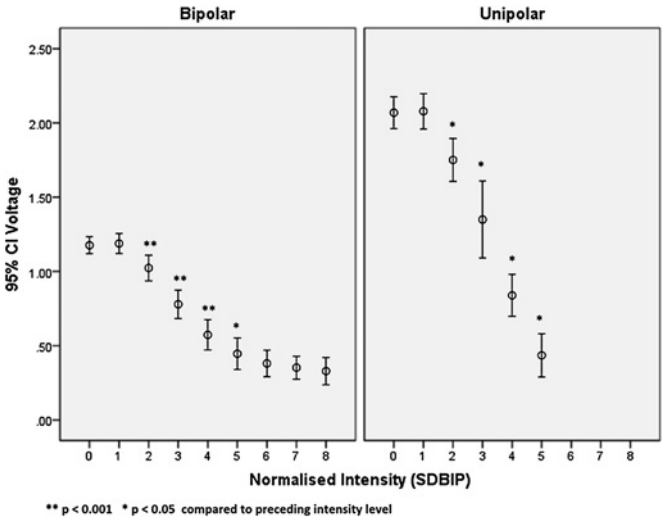
Introduction Visualisation of atrial scar using delayed-enhanced MRI (DE-MRI) may reveal causes for atrial fibrillation recurrence following ablation. To develop an objective method for delineating



Abstract 050 Figure 1 Voltage type. **p<0.001, *p<0.005 compared to preceding intensity level.