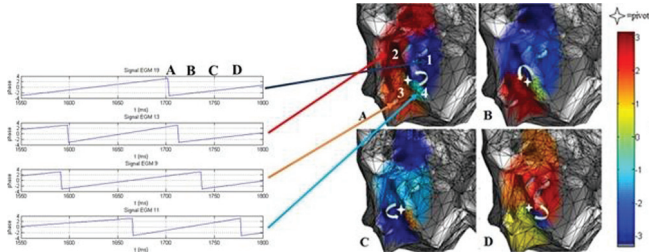


On the left panel we show the phase of four EGMs; on the right panel the phase signals are color-coded on the LA surface in four different timings (A-D) and the corresponding phase singularity points are shown with the white star. Considering 10 mm as the maximum distance between the electrodes and the atrial wall, the computed coverage of the PentaRay catheter was $12.3\% \pm 2.4\%$ of the whole intra-atrial wall. The dominant frequency estimated and used for the sinusoidal recombination method was 4.2 ± 0.2 Hz. On average, the number of detected stable rotors in each patient was 3.7 ± 4.4 , with a persistence in time of 326 ± 215 ms while no meandering rotors were detected.



Conclusions: Preliminary results showed that using the PentaRay catheter stable rotors in the LA can be detected. In our patients, such rotors were found to have a very short persistence in time. We may hypothesize that LA chamber coverage has a central role for the detection of meandering rotors, whose pivot is not stable in the small portion of mapped atrial wall.

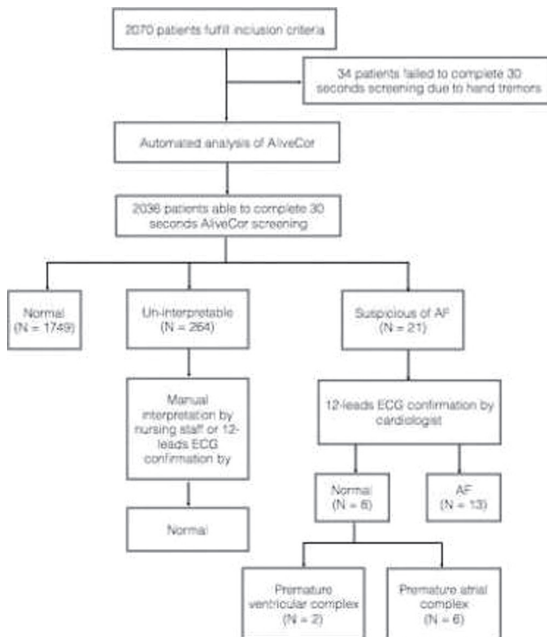
P992
Efficacy of subclinical atrial fibrillation screening by AliveCor in patients with CHA2DS2-VASc score ≥ 2

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Background: Atrial fibrillation (AF) is a well-known risk factor for ischemic stroke yet many patients with AF remain subclinical. Therefore, early detection of AF can help alleviating stroke burden. Studies using smartphone gadgets to screen for subclinical AF generally focus on community and primary care setting instead of patients with established risk factors.

Purpose: This study aims to assess the feasibility of subclinical AF screening in patients with CHA2DS2-VASc score ≥ 2 in Specialist Out Patient Department (SOPD).

Methods: The study was conducted in a local hospital in Hong Kong. Patients from geriatric and diabetic clinic, who did not have prior AF and with CHA2DS2-VASc score ≥ 2 , were selected for 30 seconds AF screening using AliveCor's KardiaMobile device under instruction of trained nursing staff. A single lead ECG tracing would be generated; the AF detection algorithm of AliveCor would interpret the rhythm and classified the results into "Normal", "Suspicious of AF" or "Un-interpretable". A standard 12 leads ECG would be performed for confirmation by a cardiologist in patients detected as "Suspicious of AF". Patients who have "Un-interpretable" result would repeat the test up to 2 times. If the test results remain "Un-interpretable", nursing staff would analyze tracing from AliveCor manually for



Flow chart of participant's recruitment

P-wave and rhythm regularity. If the rhythm were still in question, a standard 12 leads ECG would be performed and interpreted by cardiologists.

Results: From January to December 2016, 2036 patients aged 75.3 ± 9.3 years were recruited, amongst 1202 (59%) were female. Mean CHA2DS2-VASc score was 3.7 ± 1.2 . Twenty-one patients (1%) had result of "Suspicious of AF" detected by AliveCor. Among them, eight (38.1%) had false positive result with underlying premature atrial or ventricular complexes. Two hundred and sixty-four patients (12.9%) had "Un-interpretable" results, and all of them turned out to be sinus rhythm after confirmation. Overall, thirteen patients (0.6%) were detected with newly diagnosed AF.

Conclusions: Among those high-risk populations, majority of them have 12 leads ECG done in their first consultation or previous hospitalization, and a proportion of them should have been screened out. Yet, the incidence rate (0.6%) of newly diagnosed AF identified in this study is comparable to other local studies performed in community and primary care setting, and such high risk patient groups (CHA2DS2-VASc score ≥ 2) were all indicated for anticoagulation. This suggest high efficacy of screening in high-risk patients. Of significant note, there are 12.9% of "Un-interpretable result" and high false positive rate (38%) for "Suspicious of AF", which required further confirmation by health-care professionals. This reinforced the practicability of AF screening in high-risk population setting (i.e. SOPD) where, within the same setting, cardiologists are more easily accessible for prompt diagnosis as well as subsequent management.

ATRIAL FIBRILLATION – ABLATION 2

P993
Multivariate analysis of risk factors for recurrence in patients undergoing second generation cryoballoon ablation due to persistent atrial fibrillation: do vagal reactions play a predictive role?

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Background: The cardiac intrinsic autonomic nervous system (ANS) has been identified to play a crucial role in the manifestation of atrial fibrillation (AF). Cryoballoon ablation (CBA) is underway to become the first line treatment of persistent atrial fibrillation (perAF). Data on the impact of vagal reactions (VRs), as surrogate marker for cardiac ANS modulation, on the outcome of CBA in patients (pts) with perAF are of special interest for the development of future ablation strategies aiming for higher success rates.

Purpose: The primary objective of our study was to identify independent risk factors (IPs) influencing the outcome of second generation CBA in pts suffering from perAF.

Special emphasis was put on the analysis of the impact of ANS modulation, represented by pulmonary vein isolation (PVI) associated VRs, on the outcome of CBA due to perAF.

Methods: Consecutive pts undergoing primary CBA (28-mm CB) for perAF in a 2*240s per vein protocol were studied. VRs were defined as: bradycardia < 40 bpm, asystole or higher degree AV-block. Follow-up (FU) visits at 3, 6 and 12 months (m) were performed including a 7-day Holter ECG. Recurrence of atrial tachyarrhythmia (AT) represented the primary endpoint of our study.

Results: A total of 250 pts (64.1 ± 11.5 years old, 70% male) were analysed. Within 12 m after CBA, the primary endpoint of our study was reached in 76 pts (30%). VRs occurred in 61 pts (24%). Concerning ablation strategies VRs were predominantly evoked by the isolation of the first PV (n=34, 56%), which most often had been a left sided PV (33 pts, 97%; LSPV n=27 (82%), LCT n=4 (12%), LIPV n=2 (6%)).

Kaplan Meier plot analysis revealed VRs as highly significant parameter for AF-free survival (log-rank p-value < 0.001) (figure 1). Univariate Cox regression analyses confirmed VRs as a strong predictor for AF-free survival (p-value < 0.001 , hazard ratio (HR) 0.114) whereas female gender (p-value 0.023, HR 1.709), tachycardia (p-value 0.028, HR 1.011) and AF (p-value 0.026, HR 1.674) on admission and/or the beginning of the procedure were predictive for AF recurrences.

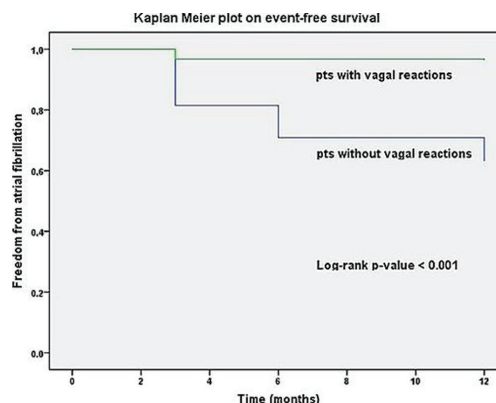


Figure 1