Conclusion: Compared to VVS, POTS is associated with both longer PWD (above normal limits) and increased RTD, whilst TpTe did not differ, despite systemic sympathetic predominance. Further clinical studies are warranted to assess the relative role of subclinical cardiac structural remodelling and impaired cardiac autonomic nervous system function.

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154

Acute Oestriol Slows Conduction in Male, but not Female, Marine Left Atria

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Pericardial adipose accumulation increases atrial fibrillation risk; however, the underlying mechanisms are not well understood.

We have demonstrated that pericardial adipose expresses aromatase, indicating capacity to locally synthesise oestrogens. In Langendorff-perfused mouse hearts, atrial arrhythmia incidence correlated with the total aromatase capacity of this adipose depot, and exogenous oestradiol increased arrhythmia vulnerability.

The aim of this study was to determine how acute administration of oestrogens modulate cardiac electrophysiology in male and female cardiomyocyte monolayers and intact left atria. Microelectrode array (MEA)-seeded neonatal rat ventricular myocytes (NRVMs) were exposed to increasing concentrations of oestradiol (0–100 nM) and synchronous field potentials recorded. Optical action potentials were measured from isolated adult mouse left atria stained with Di-4-ANEPPS, electrically paced and superfused with increasing concentrations of oestradiol (0–100 nM).

NRVM conduction velocity (CV) and field potential duration were unaffected by acute oestradiol. Acute oestradiol prolonged action potential duration at 70% repolarisation (APD70) in both male (ΔAPD70: 100 nM oestradiol vs vehicle: 5.8 ± 0.9 ms vs 16 ± 1.6 ms; P = 0.037) and female atria (7.6 ± 1.0 ms vs 3.9 ± 0.9 ms; P = 0.049). A lower oestradiol concentration slowed CV in male (ΔCV: 1 nM oestradiol vs vehicle: −9.2 ± 1.8 cm s⁻¹ vs −1.1 ± 2.7 cm s⁻¹; P = 0.007), but not female atria (ΔCV: −2.4 ± 2.0 cm s⁻¹ vs 0.05 ± 3.2 cm s⁻¹; P = 0.79).

Slowed action potential propagation and prolonged repolarisation are two key mechanisms underlying reentrant and triggered arrhythmias, respectively. These rapid responses to acute oestrogen administration indicate non-genomic influences on cardiomyocyte electrophysiology and may be mediated by stimulation of oestrogen receptor signalling pathways.

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155

AF-Express Clinic in a Tertiary, Metropolitan Hospital Reduces Emergency Department Re-Admissions

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Background: The total number of Atrial Fibrillation (AF) hospitalisations in Australia continues to increase more than for any other cardiovascular condition.

Methods: The AF-Express clinic (AFX) uses hospital data systems to automatically identify patients who have presented to Emergency Department (ED) with AF. The nurse-led clinic aim is to make early review available in less than 5 working days.

We aim for 100% capture. Clinic care is targeted toward guaranteeing basic investigations and delivery of the AF care set.

Results: Data show an increase in AFX episodes, and significant downward trend in the number of ED episodes, explaining a preliminary finding of ~16% downward trend of all AF episodes. Supporting this evidence is the small number who re-present (1.3%) after being seen in AFX as opposed to 9.3% who re-present who have not previously been seen in AFX (see Table 1).

Table 1.

<table>
<thead>
<tr>
<th>Episode</th>
<th>Re-admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED</td>
<td>117 (21.2%)</td>
</tr>
<tr>
<td>Previously seen in AFX</td>
<td>1.3%</td>
</tr>
<tr>
<td>Not seen in AFX</td>
<td>9.3%</td>
</tr>
<tr>
<td>Not seen in AFX who re-present ≥2 and ≥6 times</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Conclusions: There are early signs that the AFX, by ensuring consistent delivery of care, can reduce ED re-admissions. Ongoing evaluation of this cohort including guideline and treatment gaps are needed to influence care delivery. Using informatics system developments, AFX will serve as a template for development of other informatics-based low cost, scalable, nurse-led healthcare delivery programs.

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