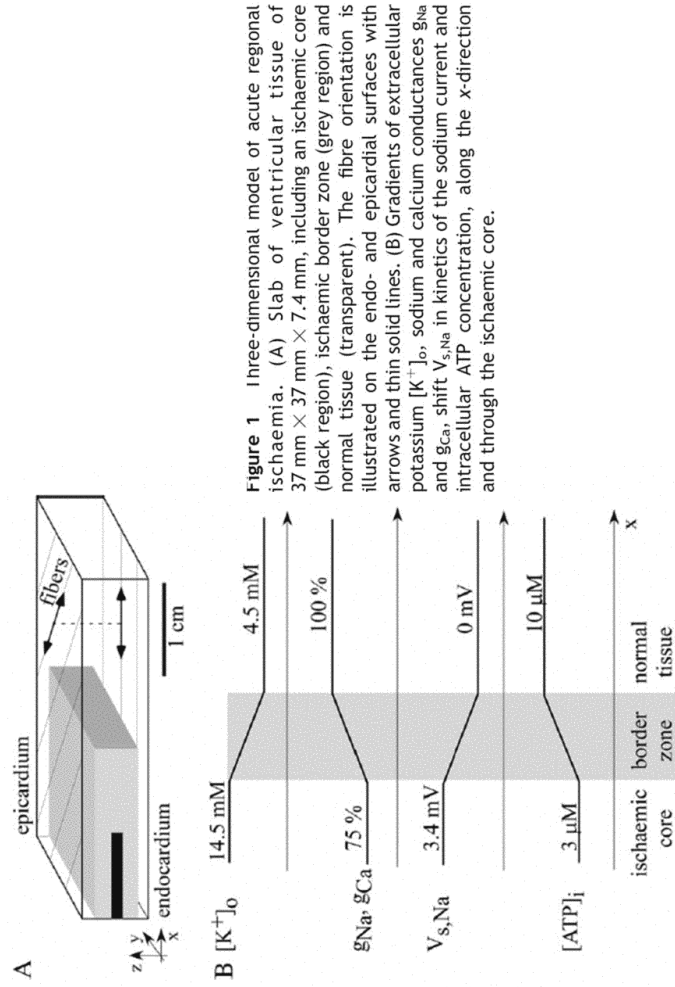


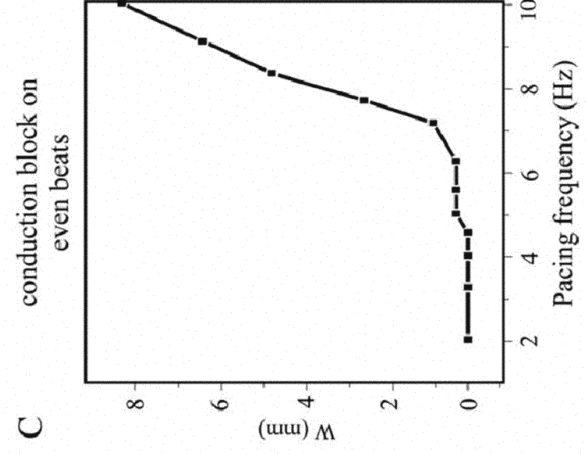
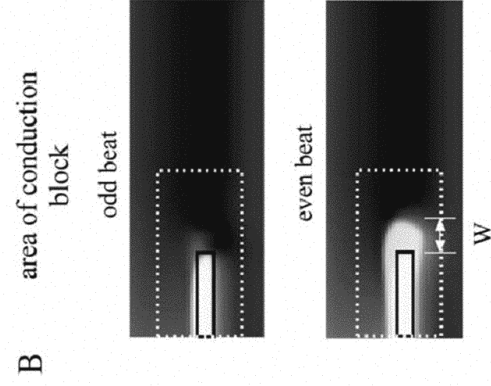
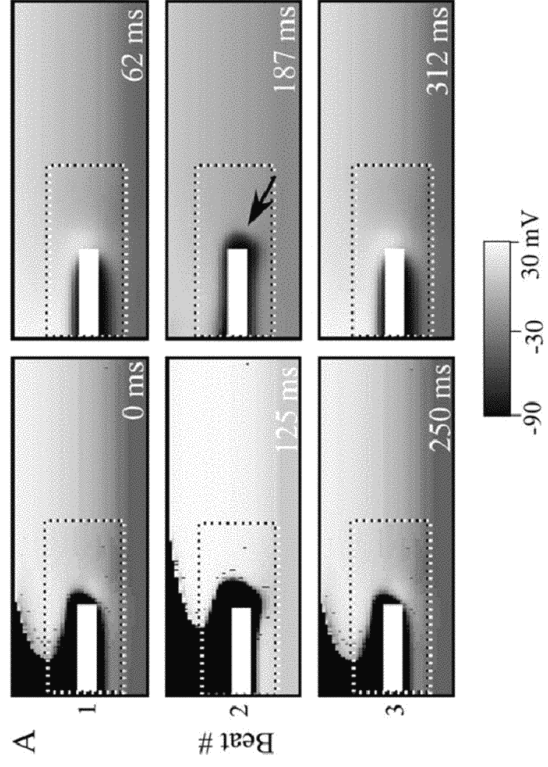
# T-wave alternans during acute regional ischemia

Link with arrhythmia

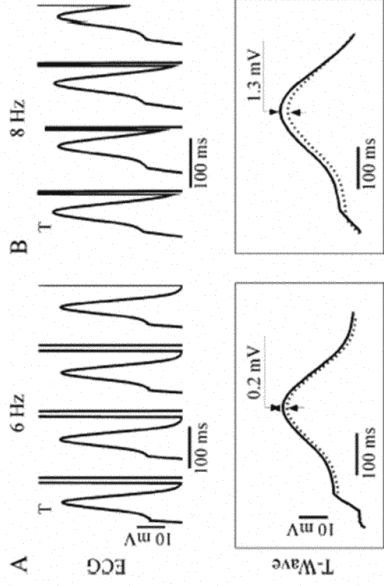
A. Pertsov



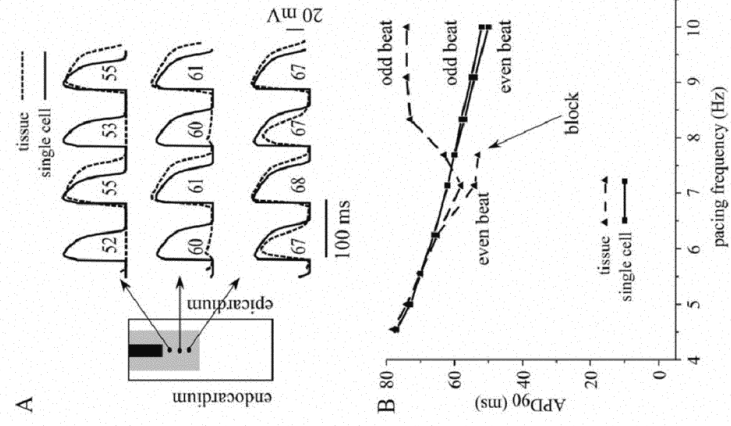
**Figure 1** Three-dimensional model of acute regional ischaemia. (A) Slab of ventricular tissue of 37 mm x 37 mm x 7.4 mm, including an ischaemic core (black region), ischaemic border zone (grey region) and normal tissue (transparent). The fibre orientation is illustrated on the endo- and epicardial surfaces with arrows and thin solid lines. (B) Gradients of extracellular potassium  $[K^+]_o$ , sodium and calcium conductances  $g_{Na}$  and  $g_{Ca}$ , shift  $V_{s,Na}$  in kinetics of the sodium current and intracellular ATP concentration, along the x-direction and through the ischaemic core.

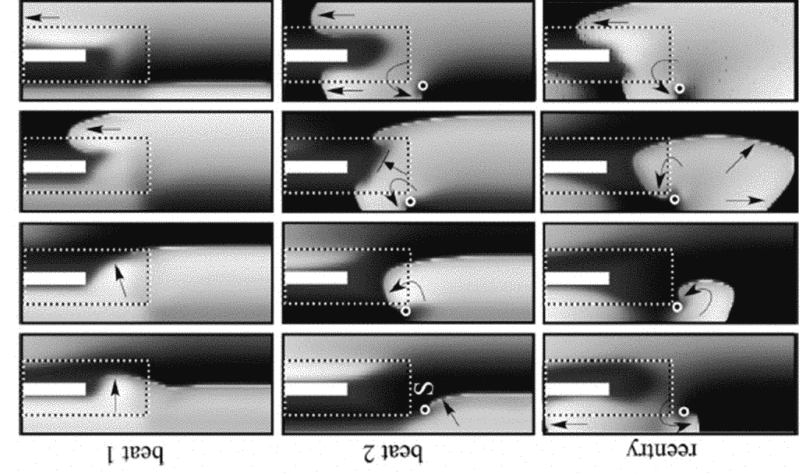
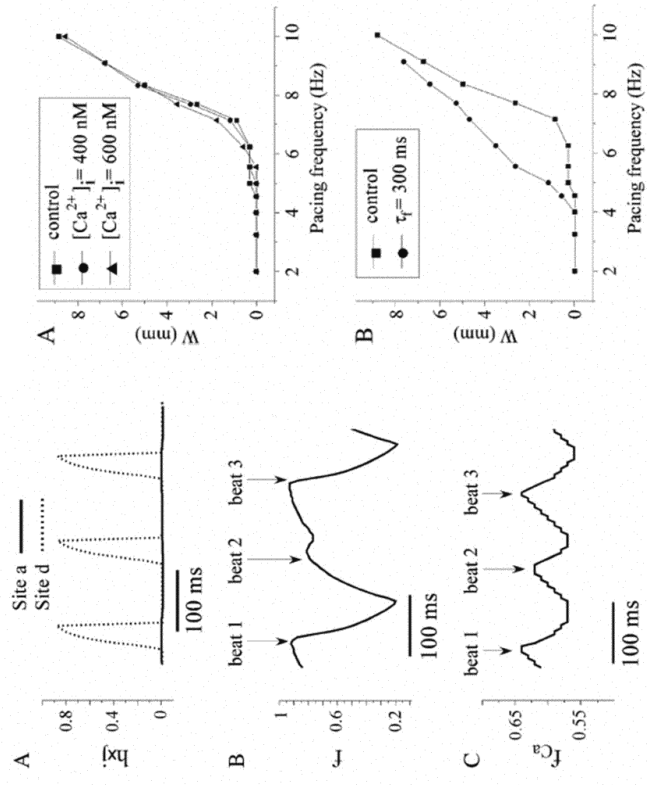


$$ECG = \frac{\sum (\nabla V_m \times r)}{r^3}$$



**Figure 3** T-wave alternans: pseudo-ECGs recorded 3 cm above the epicardial surface, during pacing at 6 Hz (A) and 8 Hz (B). The insets show a superposition of two consecutive T-waves, illustrating T-wave alternans. The amplitude of T-wave alternans is about 0.2 mV for a pacing frequency of 6 Hz (A) and is about 1.3 mV for a pacing frequency of 8 Hz (B).





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## Alternating conduction in the ischaemic border zone as precursor of reentrant arrhythmias: A simulation study

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