Mapping the maze: advancing atrial fibrillation models and therapies

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Stellingen behorende bij het proefschrift

Mapping the Maze

Advancing Atrial Fibrillation Models and Therapies

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1. Clamping ablation devices provide more consistent intraoperative isolation of the posterior left atrium compared to nonclamping devices, having the potential to provide better freedom from atrial fibrillation recurrences. *(This thesis).*

2. Thoracoscopic pulmonary vein and posterior wall isolation is an effective rhythm-control strategy for patients with long-standing persistent atrial fibrillation, particularly when combined with endocardial touch-up procedures in case of recurrences. *(This thesis).*

3. The physiological proximity of excised atrial tissue to its patient source offers distinct translational advantages, though this same biological variability provides a challenge to experiment reproducibility and standardization. *(This thesis).*

4. Conditionally immortalized human atrial myocytes (hiAMs) constitute a robust, scalable, and functionally mature cell source for disease modeling, outperforming human pluripotent stem cell-derived atrial myocytes in electrophysiological fidelity and reproducibility. *(This thesis).*

5. Optimizing atrial fibrillation ablation outcomes extends beyond procedural refinement, significant improvements in success could be achieved by the systematic integration of lifestyle risk factor management. *(Based on Vermeer et al. Eur Heart J, 2025, ehaf689).*

6. Endocardial ablation performed solely in the event of recurrence (selective two-stage hybrid ablation) could pose a more efficient strategy than single-stage hybrid approaches with similar effectiveness. *(Based on this thesis & Aerts et al. Europace, 2024, 10, euae232).*

7. Species-specific differences in heart size, atrial architecture, autonomic regulation, and ion-channel expression, plus the rarity of natural AF, create a translational gap between animal models and human atrial fibrillation. *(Based on Schüttler et al. Circ Res. 2020, 127, 91–110).*

8. Next-generation atrial fibrillation research requires combined methodological strategies, spanning conventional cellular techniques, omics-driven simulations, advanced *in vitro* validation, and AI-assisted optimization to advance individualized therapeutic innovation. *(Based on Odening et al. Europace, 2021, 11, 1795–1814).*

9. “Extraordinary claims require extraordinary evidence” *(Carl Sagan)*. Bold or unconventional findings must be supported by especially strong, transparent, and reproducible data.

10. "Risk and return go hand-in-hand" *(well-known Wall Street saying)*. When striving for higher potential (academic) returns, you must be willing to accept more volatility.