

# ATRIAL FIBRILLATION

## **ATRIAL FIBRILLATION I - PATHOPHYSIOLOGY**

- *ECG features*
- *Initiation & perpetuation of AF*
- *Physiology of the pulmonary veins*
- *Classifications of AF*
- *Mechanisms of Symptoms*
- *AF burden, screening & stroke risk*
- *Is stroke a consequence or marker of AF?*

## **ATRIAL FIBRILLATION II - RISK FACTORS**

- *Pillars of Risk factor management*
- *Physical Activity & Endurance Training*
- *Stress & Meditation*
- *Obesity & Weight Loss*
- *Sedentary behaviour*
- *Sleep & Circadian Rhythms*
- *Obstructive Sleep Apnoea*

## **ATRIAL FIBRILLATION III - MEDICAL MANAGEMENT**

- *Identifying stroke risk*
- *Pillars of AF management*
- *Rate control management strategies*
- *Rhythm control management strategies*

## **THE ROLE OF ATRIAL FIBRILLATION ABLATION: REVIEWING THE EVIDENCE**

- *Impact of AF on Quality of Life*
- *AF ablation & mortality*
- *AF ablation & quality of life & symptom alleviation*
- *AF ablation & stroke risk*
- *AF ablation impact on AF burden*
- *AF ablation & Heart failure*
- *Should we delay AF ablation or rush to early AF ablation?*

## **QUIZ: ATRIAL FIBRILLATION MANAGEMENT**

## PULMONARY VEIN ISOLATION

### **PVI WITH CRYOABLATION**

- *Single shot vs Point by Point*
- *Cryoablation biophysics*
- *Cryoablation equipment*
- *Live Cryoablation walkthrough*
- *Positive predictors of success*
- *Pros & Cons of Cryoablation*

### **PVI - PULSED FIELD ABLATION VS THERMAL ABLATION**

- *Pulsed Field Ablation Biophysics*
- *Cardiac Selectivity in PFA?*
- *Compared to thermal ablation PV reconnection rate*
- *Complication rates across all PVI modalities*
- *Complications related to PFA PVI*

### **PVI WITH RADIOFREQUENCY ABLATION**

- *PVI Ostial Vs Wide Antral ablation strategies*
- *Complications when performing RF PVI*
- *Role of Ganglionic Plexi injury in ablation efficacy*
- *PVI procedural endpoints: Entrance & Exit Block*

### **SAFETY CONSIDERATIONS FOR THERMAL PVI**

- *Phrenic nerve palsy*
- *Procedural techniques to avoid phrenic nerve palsy*
- *Mechanisms of atrio-oesophageal fistula*
- *Incidence of atrio-oesophageal fistula*
- *Techniques for avoiding atrio-oesophageal fistula*
- *Stroke risk involved in PVI.*

### **PVI WITH EMERGENT TECHNOLOGIES & TECHNIQUES**

- *CLOSE-protocol AF ablation*
- *Force Time Power indexes*
- *High Power Short duration ablation*
- *Temperature-regulated irrigated ablation*
- *Indicators for lesion formation – impedance fall*
- *Indicators of lesion transmuralty – Abolition of Unipolar S waves*

### **QUIZ: PULMONARY VEIN ISOLATION**

## EXTRA- PULMONARY VEIN ISOLATION

### POSTERIOR WALL ISOLATION

- *Results from the CAPLA study*
- *Physiology & anatomy relevant to posterior wall isolation*
- *Challenges in isolating the posterior wall*
- *Practical procedural considerations in isolating the posterior wall*
- *Pacing manoeuvres to map, ablate & facilitate isolation*

### TARGETING LOW VOLTAGE REGIONS (ERASE-AF)

- *DECAFF-II, STAR-AF II, CAPLA & Stable SR II trial results*
- *Methodological differences & ambiguities in ERASE AF study*

### POSTEROLATERAL MITRAL ISTHMUS LINES

- *Anatomical considerations for performing a Mitral Isthmus line*
- *Evidence FOR and AGAINST Mitral isthmus ablation for AF*
- *Procedural techniques & considerations*
- *Complications*
- *Pacing manoeuvres to determine mitral isthmus block*

### SVC ISOLATION

- *Anatomical considerations & evidence of SVC isolation*
- *Mapping the SA node*
- *Mapping the phrenic nerve & avoiding phrenic nerve injury*
- *Complications associated with SVC isolation*
- *Positive predictors for success*

### CORONARY SINUS ISOLATION

- *Coronary sinus anatomy & it's relationship with the RA & LA*
- *The role of AF in initiating & perpetuating AF*
- *Evidence for and against the role of CS ablation in preventing AF*
- *Mapping & ablation techniques for achieving CS isolation*
- *Complications associated with CS isolation*

### LAA ISOLATION & OCCLUSION

- *Why you shouldn't perform LAA isolation with catheter ablation*
- *Surgical evidence on the role of LAA isolation*
- *BELIEF trial results*
- *LAA isolation & stroke risk*
- *Left Atrial Appendage Closure Devices*

### QUIZ: ADJUNCTIVE AF TECHNIQUES

# MANAGING RECURRENT ATRIAL FIBRILLATION

## REISOLATING VEINS IN REDO AF

- *Priorities of redo AF ablation*
- *Hunting for reconnections*
- *Using LAT and voltage mapping techniques*

## REDO AF - NON PULMONARY VEIN TRIGGERS

- *AF triggers distribution*
- *Identifying non-PV triggers*
- *Ablation outcomes of non-PV triggers*
- *Isolating non-PV structures*
- *Low voltage homogenisation*
- *Stiff LA syndrome*
- *Targeting macroreentry*

## EPICARDIAL STRUCTURES CONTRIBUTING TO AF RECURRENCE

- *Epi-endocardial dissociation and connections*
- *Histological evidence*
- *Septopulmonary bundle*
- *Ligament of Marshall*
  - *Mitral isthmus ablation*

## PACE & ABLATE: THE END OF THE LINE

- *Why pace & ablate*
- *Pacing induced cardiomyopathy*
- *PPM programming during AVN ablation*
- *AVN anatomy*
- *AVN ablation*
- *AVN isolation*
- *PPM programming post AVN ablation*

## 3D AF ABLATION CASE STUDY

## QUIZ: MANAGING RECURRENT AF