EP 101 - Program

Annual Workshop for Early Career EPs
19-21 February 2027

Day 1 - Friday, 19 February 2027

08:15 - 08:45	**Breakfast**
08:45 - 09:00	**Introduction** *Raja Selvaraj* A quick introduction, setting out the key elements of the program. Objectives, important design aspects, feedback, evaluation.
09:00 - 09:40	**Essential anatomy for EP** *Raja Selvaraj* External anatomy Internal anatomy of RA, RV, LA and LV
09:40 - 10:20	**Fluoroscopic anatomy for EP** *John Roshan* Basic views and anatomy in each view. Applied fluoroscopic anatomy for each chamber. Useful views while mapping different arrhythmias.
10:20 - 11:00	**ECG in relation to EP - Sinus** *John Roshan* ECG in sinus rhythm - Preexcitation, Ebstein anomaly, DAVNP
11:00 - 11:20	**Coffee break**
11:20 - 12:00	**ECG in relation to EP - Tachycardia** *Raja Selvaraj* ECG findings of relevance to EP study in patients with narrow and wide complex tachycardia.
12:00 - 12:40	**EP lab hardware** *John Roshan* Diagnostic and ablation catheters. HD mapping catheters Sheaths
12:40 - 13:20	**EP Signals and measurements** *Raja Selvaraj* EP lab set up Filtering and amplification Bipolar and unipolar signals Amplifier set up, page set up Views - real time, review, triggered
13:20 - 14:00	**Lunch**
14:00 - 14:40	**Stimulator and Pacing protocols** *John Roshan* Stimulator, setting up sensing different pacing protocols
14:40 - 15:20	**Biophysics of RF - Basics** *Raja Selvaraj* Biophysics principles Impact of electrode size, power, time and contact force Irrigation, different irrigants
15:20 - 16:00	**Advanced RF biophysics, biophysics of Cryo and PFA** *John Roshan* Biophysics of bipolar ablation / simultaneous unipolar ablation Biophysics of cryo ablation Biophysics of PFA
16:00 - 16:20	**Coffee break**

16:20 - 17:00	**Normal electrophysiologic responses** *Raja Selvaraj* Normal response with ventricular pacing Normal response with atrial pacing
17:00 - 17:40	**Narrow QRS tachycardia - Evaluation in sinus rhythm** *John Roshan* Distinguishing nodal vs extranodal VA conduction. Identifying dual AV nodal physiology. Preexcitation patterns and response to extrastimuli. Parahisian pacing
17:40 - 18:20	**Narrow QRS tachycardia - Evaluation during tachycardia part I** *Raja Selvaraj* Tachycardia measurements, VA relationship, VA interval and atrial activation sequence VOP to distingish mechanisms
18:20 onwards	**End of day - Beach and dinner**

Day 2 - Saturday, 20 February 2027

08:00 - 08:20	**Breakfast**
08:20 - 09:00	**Narrow QRS tachycardia - Evaluation during tachycardia part II** *John Roshan* His refractory PVC, AH during tachycardia, VA linking, simultaneous AV pacing
09:00 - 09:40	**AVNRT - Mechanism and Diagnosis** *Raja Selvaraj* AVNRT types and mechanism Basic diagnosis - tachycardia, pacing maneuvers DD and how to differentiate - AVRT, AT, NV/NF AVRT
09:40 - 10:20	**AVNRT - Mapping and ablation** *Raja Selvaraj* Identifying the operative slow pathway - resetting response Mapping approach - fluoro, EGM, 3D Ablation - power, monitoring VA conduction
10:20 - 11:00	**AV accessory pathways - Evaluation and diagnosis** *John Roshan* Tachycardia characteristics Diagnosing AVRT, DD
11:00 - 11:20	**Coffee break**
11:20 - 12:00	**AV accessory pathways - Mapping and ablation** *John Roshan* General principles of mapping accessory pathways. Mapping and ablation of septal pathways Mapping and ablation of right-sided pathways. Mapping and ablation of left-sided pathways
12:00 - 12:40	**Atypical accessory pathways - Evaluation and diagnosis** *Raja Selvaraj* CS accessory pathways Atrial appendage to ventricle pathways atriofascicular - only brief mention nodoventricular / nodofascicular Fasciculoventricular
12:40 - 13:20	**Atriofascicular accessory pathways - Mapping and ablation** *John Roshan* Atriofascicular AP - Anatomy and EP characteristics Antidromic AVRT - evaluation Mapping and ablation
13:20 - 14:00	**Lunch**
14:00 - 14:40	**Atrial tachycardia and flutter - Evaluation and diagnosis** *Raja Selvaraj* Terminology AT - identifying chamber A flutter - entrainment, mapping
14:40 - 15:20	**Atrial flutter - Mapping and ablation** *John Roshan* Mapping and ablation of typical flutter Establishing bidirectional block Mapping and ablation of atypical flutters Mitral isthmus ablation
15:20 - 16:00	**Case in the box - SVT I** *JIPMER faculty*
16:00 - 16:20	**Coffee break**

16:20 - 17:00	**Wide QRS tachycardia - ECG and evaluation in sinus** *John Roshan* ECG - Identifying common wide QRS tachycardias. Clues during atrial and ventricular pacing.
17:00 - 17:40	**Wide QRS tachycardia - Evaluation in tachycardia** *Raja Selvaraj* Differentiation of SVT, VT, and preexcited tachycardia. Identification of bundle branch reentry.
17:40 - 18:20	**Case in box 2 - WCT** *CMC faculty*
18:20 onwards	**End of day and dinner**

Day 3 - Sunday, 21 February 2027

08:00 - 08:20	**Breakfast**
08:20 - 09:00	**Idiopathic RVOT VT** *John Roshan* ECG morphology RV versus LV OT locations Mapping and ablation
09:00 - 09:40	**Idiopathic LV fascicular VT** *Raja Selvaraj* Clinical presentation and ECG Variants and proposed circuits Mapping and ablation
09:40 - 10:20	**Delegate evaluation** *Raja Selvaraj and John Roshan* 10 questions each
10:20 - 11:00	**Coffee break and Group Photo**
11:00 - 12:00	**Discussion of evaluation tracings** *Raja Selvaraj and John Roshan*
12:00 - 12:30	**Interactions and feedback**
12:30 onwards	**Lunch and disperse**