

Indian Association of Cardiovascular Thoracic Anaesthesiologists (IACTA)

ICCA Online Academic Program

Session: Orientation in Cardiac Anesthesia

Objective:To impart essential knowledge and basic skills to start cardiac Anesthesia residency program ensuring maximum patient safety

<i>Date</i>	<i>Topic</i>	<i>Speaker</i>	<i>Moderator</i>
Week 1	Faculty Lecture: Cardiac risk assessment and cardiac risk stratification in patients undergoing cardiac surgery	Dr. Deepak Tempe	Dr. Deepak Tempe
	Student presentation: Preoperative optimisation of patients prior to cardiac surgery	Dr. Mahender Prasad	
Week 3	Basic Science Session		Dr. Uday Gandhe
	Student Presentation: Cardiac conduction system	Dr. Aparna A. Ruparel	
	Faculty Presentation: Mechanism of cardiac arrhythmias	Dr. Uday Gandhe	
Week 5	Faculty Tutorial with pre-selected students with other students in audience:	Dr. Manjula Sarkar	Dr. Manjula Sarkar
	ECG spotters		
	Faculty will discuss ECG rhythms relevant to cardiac anesthesia practice		
	Student presentation: Anti-arrhythmic drugs (followed by interactive discussion)	Dr. Ashwanth Adiththan	
Week 7	Faculty Tutorial with pre-selected students with other students in audience:	Dr. Satyajeet Mishra	Dr. Satyajeet Mishra
	Pacemakers (Temporary and Permanent)		
	Faculty will demonstrate parts of an external pulse generator in addition to scientific principles		
	Student presentation: AICD (followed by interactive discussion)	Dr. Jebin Lal	
Week 9	Hemodynamic Monitoring (Faculty Tutorial with pre-selected students with other students in audience)	Dr. Nagaraj PS	Dr. Nagaraj PS
	Arterial pressure monitoring; CVP monitoring and PA pressure monitoring		
	Moderator will discuss essential principles and practice with special considerations in pediatric pts.		
	Student presentation: Cardiopulmonary interaction and fluid responsiveness (followed by interactive discussion)	Dr. Gargi Deshpande	
Week 11	Faculty Lecture: CO monitoring: Invasive and non invasive	Dr. Gopinath R	Dr. Gopinath R
	Student presentation: Intracardiac shunt calculation (followed by interactive discussion)	Dr. Kritika Sharma	

Week 13	Student presentation: Receptors regulating cardiac function (followed by interactive discussion)	Dr. Tejashwini Rayannavar	Dr. Bikash Sahoo
	Faculty Tutorial with pre-selected students & others in audience: Inotropes & Vasoactive medicines in cardiac anesthesia practice	Dr. Bikash Sahoo	
	Faculty will discuss relevant pharmacology of inotropes and vasoactives		
Session: Cardiopulmonary Bypass			
Week 15	Faculty Tutorial with pre-selected students with other students in audience:		
	CPB Circuit		
	Faculty will discuss Oxygenator; Reservoirs; Heat exchanger; Arterial line filter; Cannulae and tubings; Cardioplegia delivery system		
	Student presentation: CPB prime (followed by interactive discussion)		
Week 17	Faculty Lecture		
	Perioperative blood conservation strategy including cell salvaging systems		
	Student presentation: Jehovahs witness: management strategies (followed by interactive discussion)		
Week 19	Faculty Lecture		
	Myocardial protection during cardiac Sx		
	Student presentation: Pharmacokinetics & pharmacodynamics of anesthetic drugs during CPB (followed by interactive discussion)		
Week 21	Faculty Lecture		
	Causes of perioperative CNS injury; CNS monitoring & neuro-protection strategies		
	Student presentation: Hypothermia vs Normothermia in open heart surgery (followed by interactive discussion)		
Week 23	Faculty Lecture		
	Coagulation monitoring		
	Student presentation: Safety mechanisms in heart lung machine (followed by interactive discussion)		
Week 25	Faculty Tutorial with pre-selected students with other students in audience:		
	Heparin and alternative methods of anticoagulation; Protamine.		
	Faculty will discuss essential pharmacology of various anticoagulants and protamine		

	Student presentation: TEG, ROTEM and Point of Care devices for platelet function monitoring		
	Moderator will explain interpretation of TEG & ROTEM charts and principles of platelet function monitoring		
Week 27	Faculty Lecture		
	Management of CPB: Prebypass; Initiation and discontinuation of bypass support		
	Student presentation: Principles of ultrafiltration and different types of ultrafiltration (followed by interactive discussion)		
Week 29	Faculty Lecture		
	Management of excessive bleeding after cardiac surgery		
	Student presentation: SIRS in CPB. (followed by interactive discussion)		
Week 31	Faculty Lecture		
	Special considerations of CPB in pediatric patients		
	Student presentation: Effect of CPB on pulmonary function & pulmonary protection strategies (followed by interactive discussion)		
Week 33	Faculty Lecture		
	Perfusion Emergencies		
	Student presentation: Effect of CPB on splanchnic circulation and GI protection techniques (followed by interactive discussion)		
Session: Anesthesia for Myocardial Revascularisation			
Week 35	Basic Science session:		
	Student Presentation: Coronary anatomy (followed by interactive discussion)		
	Faculty Lecture: interpretation of coronary angiogram		
Week 37	Basic Science session:		
	Faculty Lecture: Coronary perfusion & pathogenesis of myocardial ischemia		
	Student presentation: LV pressure volume loops (followed by interactive discussion)		
Week 39	Faculty Tutorial with pre-selected students with other students in audience:		
	Anti ischemic drug therapy; pharmacotherapy for Heart Failure		
	Faculty will discuss relevant pharmacology of anti-anginals and anti-failure medications		
	Student presentation: Volatile Anesthetic agents for myocardial protection (followed by interactive discussion)		

Week 41	Faculty Lecture		
	Intra Aortic Balloon Pump		
	Student presentation: Inhaled nitric oxide for cardiac surgery (followed by interactive discussion)		
Week 43	Case Presentation by student		
	Anesthesia for CABG		
	Discussion will include ischemia monitoring & postop care issues: pain management; management of mediastinal bleeding		
	Faculty Lecture: Fast tracking in Cardiac Anesthesia		
Week 45	Case Presentation by student		
	Hemodynamic instability of a patient in cardiac cath lab following failed high risk PCI (followed by interactive discussion)		
	Faculty Lecture: Take home message from SYNTAXES study		
Week 47	Case Presentation by student		
	CABG with ischemic MR: Anesthetic implications (followed by interactive discussion)		
	Faculty Lecture: Perioperative TEE assessment and decision making for Ischemic MR		
Week 49	Faculty Lecture		
	Minimally invasive Coronary artery surgery: Anesthetic considerations including principles and practice of one lung ventilation		
	Student presentation: Role of central neuraxial blockade in myocardial revascularization Sx (followed by interactive discussion)		
Week 51	Case Presentation by student		
	CABG in a pt with chronic renal failure not requiring dialysis (followed by interactive discussion)		
	Faculty Lecture: Chest wall fascial plain blocks. Recent advances		
Week 53	Case Presentation by student:		
	Redo CABG		
	Discussion will include concepts of perioperative blood conservation strategy, coagulation abnormalities & management of coagulopathy		
	Faculty lecture: Sickle cell anemia for CABG		
Session: Valvular Heart Disease			
Week 55	Case Presentation by student		
	Rheumatic Heart Disease: Etiology; Pathophysiology; Clinical features and management (followed by interactive discussion)		
	Faculty Lecture: Aortic Stenosis		

	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
Week 57	Case Presentation by student: Infective Endocarditis: Etiology; Pathophysiology; Clinical features and management (followed by interactive discussion)		
	<i>Faculty Lecture: HOCM</i>		
	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
Week 59	<i>Case Presentation by student:</i>		
	Aortic Regurgitation		
	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
	<i>Faculty Lecture: Percutaneous/ Transapical AVR</i>		
Week 61	<i>Case Presentation by student</i>		
	Mitral Stenosis		
	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
	<i>Faculty Lecture: Minimally invasive mitral valve surgery</i>		
Week 63	<i>Case Presentation by student</i>		
	Mitral Regurgitation		
	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
	<i>Faculty Lecture: Mitral valve repair techniques</i>		
Week 63	<i>Case Presentation by student</i>		
	Tricuspid Regurgitation		
	<i>Discussion will include Pathophysiology; clinical features; when to intervene; anesthetic considerations & periop TEE assessment</i>		
	<i>Faculty Lecture: Assessment of Right Ventricle by echocardiography</i>		
Session: Congenital Heart Disease			
Week 65	<i>Faculty Lecture</i>		
	<i>Cardiac embryology and normal cardiac development</i>		
	Student presentation: Congenital heart disease nomenclature (followed by interactive discussion)		
Week 67	<i>Faculty Lecture</i>		
	<i>Fetal, transitional and postnatal circulation</i>		

	Student presentation: Pulmonary hypertension: Definition; cause and management (followed by interactive discussion)		
Week 69	Faculty Lecture		
	Anesthesia for congenital heart disease in the cardiac cath lab		
	Student presentation: Nutritional assessment & periop nutritional management in CHD (followed by interactive discussion)		
Week 71	Case Presentation by student		
	Patent Ductus Arteriosus (followed by interactive discussion)		
	Faculty Lecture: Atriopulmonary Septal Defect		
Week 73	Case Presentation by student		
	Atrial Septal Defect (followed by interactive discussion)		
	Faculty Lecture: Cor Triatriatum		
Week 75	Case Presentation by student		
	Ventricular Septal Defect (followed by interactive discussion)		
	Faculty Lecture: Congenital Aortic Stenosis		
Week 77	Case Presentation by student		
	AV Canal Defect (followed by interactive discussion)		
	Faculty Lecture: Double Outlet Right Ventricle		
Week 79	Case Presentation by student		
	TAPVC (followed by interactive discussion)		
	Faculty Lecture: Anomalous origin of coronary artery		
Week 81	Case Presentation by student		
	Coarctation of Aorta (followed by interactive discussion)		
	Faculty Lecture: Truncus Arteriosus		
Week 83	Case Presentation by student		
	Tetralogy of Fallot (followed by interactive discussion)		
	Faculty Lecture: Ebsteins anomaly		
Week 85	Case Presentation by student		
	Tricuspid Atresia (followed by interactive discussion)		
	Faculty Lecture: Role of Regional anesthesia in CHD		
Week 87	Case Presentation by student		
	Transposition of Great Arteries (followed by interactive discussion)		
	Faculty Lecture: Hypoplastic Left Heart Syndrome		

Session: Thoracic and Abdominal Aorta			
Week 89	Student presentation: Pathophysiology of Aortic Aneurysm (followed by interactive discussion)		
	Faculty Lecture		
	Anesthetic management of ascending and arch thoracic aortic aneurysm		
Week 91	Faculty Lecture		
	Anaesthetic management for open surgical repair of descending thoracic and thoracoabdominal aortic aneurysm		
	Discussion will include techniques to decrease risk of intraop spinal cord ischemia		
	Student presentation: Anesthetic implications for Thoracic Endovascular Aortic Repair (followed by interactive discussion)		
Week 93	Case Presentation by student:		
	Anaesthetic management of acute Aortic Dissection (followed by interactive discussion)		
	Faculty Lecture: Anesthetic management of patients with anterior mediastinal mass		
Session: Perioperative Echocardiography			
Week 95	Faculty Lecture		
	Physics of Ultrasound and Knobology		
	Student presentation: Comprehensive TEE examination (followed by interactive discussion)		
Week 97	Student presentation:		
	LV systolic function assessment (followed by interactive discussion)		
	Faculty Lecture: LV diastolic function assessment		
Week 99	Faculty Lecture		
	Principles of 3D echocardiography		
	Student presentation: Hemodynamic assessment by echocardiography (followed by interactive discussion)		
Additional Topics			
Week 101	Student presentation: Pathophysiology of Heart Failure. Management of acute heart failure (followed by interactive discussion)		
	Faculty Lecture		
	VV and VA ECMO		
Week 103	Student presentation: Ventricular assist devices		
	Discussion will include indications; anesthetic implication & postoperative issues		
	Faculty Lecture		
	Heart Transplantation		

Week 105	Student presentation: Organ preservation in a brain dead patient		
	<i>Discussion will include anesthetic implications for organ harvesting in a brain dead patient</i>		
	<i>Faculty Lecture</i>		
	<i>Lung Transplantation</i>		