

## **1. Embryology of the Heart and Great Vessels**

## **2. Fetal Echocardiography**

- Methodological approach and principal imaging views.

## **3. Methodological Approach to the Diagnosis of Congenital Heart Diseases in Pediatric Patients**

- Basic echocardiographic instrumentation and correct utilization.
- Fundamental knowledge of normal cardiac anatomy.
- Standard echocardiographic imaging planes.
- Segmental-sequential analysis and measurement techniques in pediatric age.

## **4. Epidemiology and Etiology of Congenital Heart Diseases**

## **5. Anomalies of Visceral-Atrial Situs and Systemic/Pulmonary Venous Return**

- Pathological anatomy.
- Echocardiographic diagnosis.
- Main treatment strategies: medical, interventional, and surgical.
- Echocardiographic evaluation after surgery, general principles.

## **6. Atrial Septal Defects / Patent Foramen Ovale / Ventricular Septal Defects / Patent Ductus Arteriosus**

- Anatomopathological classification.
- Echocardiographic diagnosis.
- Treatment options: medical, interventional, and surgical.
- Echocardiographic follow-up in the post-operative/ interventional and long term follow up .
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **7. Congenital Mitral and Tricuspid Valve Diseases – Cor Triatriatum**

- Anatomopathological classification.
- Echocardiographic methodology.
- Diagnostic techniques.
- Treatment strategies: medical, interventional, and surgical.
- Echocardiographic postoperative evaluation and long term follow-up.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **8. Cardiomyopathies**

- Anatomopathological classification.
- Pathophysiological principles.

- Echocardiographic diagnosis.
- Role of advanced echocardiography (strain imaging, 3D echocardiography).
- Echocardiographic follow-up strategies.

### **9. Ventriculo-Arterial Connection Anomalies: Simple and Corrected Transposition of the Great Arteries**

- Anatomopathological classification.
- Fetal and neonatal echocardiographic diagnosis.
- Pathophysiological considerations.
- Main treatment strategies: medical, interventional, and surgical.
- Echocardiographic evaluation after surgery.
- Echocardiography in the adult patient post Senning\Mustard and ccTGA
- Echocardiography in the adult patient post arterial switch and post complex repair (Rastelli, REV, ect).
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

### **10. Right Ventricular Outflow Tract Obstruction**

#### ***(Pulmonary Stenosis, Tetralogy of Fallot, Pulmonary Atresia with VSD, Pulmonary Atresia with Intact Septum)***

- Anatomopathological classification.
- Echocardiographic diagnosis.
- Pathophysiological considerations.
- Treatment strategies: medical, interventional, and surgical.
- Echocardiographic evaluation after surgery.
- Echocardiography in the adult patient with repaired TOF
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

### **11. Left Ventricular Outflow Tract Obstruction**

#### ***(Aortic Stenosis, Aortic Coarctation, Hypoplastic Left Heart Syndrome)***

- Anatomopathological classification.
- Echocardiographic diagnosis.
- Pathophysiological considerations.
- Treatment strategies: medical, interventional, and surgical.
- Echocardiographic evaluation after surgery\percutaneous procedure and long term follow up.
- Echocardiography in the follow up of adult patient with repaired Coa.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **12. Atrioventricular Canal Defects**

- Anatomopathological classification.
- Echocardiographic diagnosis.
- Pathophysiological principles.
- Treatment strategies: medical, interventional, and surgical.
- Echocardiographic evaluation after surgery.
- Echocardiography in the adult patient with repaired AVSD.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **13. Congenital Coronary Artery Anomalies & Acquired Heart Diseases in Children (Kawasaki Disease, Infective Endocarditis, Myocarditis, Pericarditis, COVID-19/MIS-C)**

- Anatomopathological classification.
- Echocardiographic diagnosis.
- Pathophysiological considerations.
- Treatment strategies: medical, interventional, and surgical.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **14. Neonatal Cardiac Emergencies**

- Definition, classification, and basic diagnostic approach.
- Pathophysiological principles.
- Echocardiographic diagnosis.
- Emergency treatment strategies: medical, interventional, and surgical.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **15. Echocardiography in Adults with Congenital Heart Disease (ACHD)**

- Basic methodological approach.
- Pathophysiological considerations.
- Echocardiographic diagnosis.
- Role of advanced echocardiographic techniques (strain imaging, 3D echocardiography).

## **16. Univentricular Heart and Fontan Circulation**

- Definition and anatomical classification.
- Pathophysiology of univentricular circulation.
- Echocardiographic diagnosis and long-term follow-up after Fontan surgery.
- Surgical treatment techniques and echocardiographic monitoring.