ESC Congress 2025 together with World Congress of Cardiology –

Topics for Abstract Submission

At the time of abstract submission, the submitter must select one single topic to index the abstract.
It is important to carefully select the best matching topic as this will determine the area under which the abstract will be reviewed and graded.

The topic list is organised by main topics and several layers of subtopics to maximise precision. Appropriately choosing the main topic and first subheadings is more important than the lowest layers of subtopics.

Topics shown *in italic* serve as an indicator and may be useful to select the appropriate submission topic when your research is very specific.

B - IMAGING
C - ARRHYTHMIAS AND DEVICE THERAPY
D - HEART FAILURE
E - CORONARY ARTERY DISEASE, ACUTE CORONARY SYNDROMES, ACUTE CARDIAC CARE
F - VALVULAR, MYOCARDIAL, PERICARDIAL, PULMONARY, CONGENITAL HEART DISEASE
G - DISEASES OF THE AORTA, PERIPHERAL VASCULAR DISEASE, STROKE
H - INTERVENTIONAL CARDIOLOGY AND CARDIOVASCULAR SURGERY
I - HYPERTENSION
J - PREVENTIVE CARDIOLOGY
K - CARDIOVASCULAR DISEASE IN SPECIAL POPULATIONS
L - CARDIOVASCULAR PHARMACOLOGY
M - CARDIOVASCULAR NURSING AND ALLIED PROFESSIONS
N - e-CARDIOLOGY/DIGITAL HEALTH, PUBLIC HEALTH, HEALTH ECONOMICS, RESEARCH METHODOLOGY
O - BASIC SCIENCE

B IMAGING

3 Echocardiography

- 3.1 Technology
- 3.2 Morphology, Dimensions, Volumes and Mass
- 3.3 Systolic and Diastolic Function
- 3.4 Valvular Heart Disease
- 3.5 Myocardial Disease
- 3.6 Pericardial Disease
- 3.7 Congenital Heart Disease
- 3.8 Masses and Sources of Emboli
- 3.9 Doppler Echocardiography
- 3.10 Transoesophageal Echocardiography (TOE)
- 3.11 Contrast Echocardiography
- 3.12 Tissue Doppler, Speckle Tracking and Strain Imaging
- 3.13 Stress Echocardiography
- 3.14 3D Echocardiography
- 3.15 Intraoperative and Interventional Echocardiography

4 Cardiac Computed Tomography (CT)

- 4.1 Technology
  - 4.1.1 X-ray Generation and Attenuation Physics
  - 4.1.2 Image Reconstruction
  - 4.1.3 Radiation Exposure
- 4.2 Morphology, Dimensions, Volumes and Mass
- 4.3 Systolic and Diastolic Function
- 4.4 Valvular Heart Disease
- 4.5 Myocardial Disease
- 4.6 Pericardial Disease
- 4.7 Congenital Heart Disease
- 4.8 Coronary Calcium
- 4.9 Coronary Computed Tomography Angiography (Coronary CTA, CCTA)
  - 4.9.1 Computed Tomography Derived Fractional Flow Reserve (FFR-CT)
- 4.10 Plaque Imaging
- 4.11 Computed Tomography Myocardial Perfusion
- 4.12 Computed Tomography Imaging of Structural Heart Disease
- 4.13 Cardiac Devices
- 4.14 Extracardiac Findings

5 Cardiac Magnetic Resonance (CMR)

- 5.1 Technology and Physics
- 5.2 Morphology, Dimensions, Volumes and Mass
- 5.3 Systolic and Diastolic Function
- 5.4 Valvular Heart Disease
- 5.5 Myocardial Disease
- 5.6 Pericardial Disease
- 5.7 Congenital Heart Disease
- 5.8 Deformation Imaging
- 5.9 Flow Imaging
- 5.10 Stress Cardiac Magnetic Resonance (CMR)
- 5.11 Stress Myocardial Perfusion Magnetic Resonance
- 5.12 Dobutamine Stress Magnetic Resonance
- 5.13 Late Gadolinium Enhancement
- 5.14 T1 and T2 Mapping
- 5.15 Extracellular Volume
- 5.16 Coronary Imaging
- 5.17 Plaque Imaging
- 5.18 Angiography
- 5.19 Cardiac Masses
- 5.20 Safety

6 **Nuclear Imaging**
- 6.1 Technology and Tracers
  - 6.1.1 Radiation Exposure
- 6.2 Single Photon Emission Computed Tomography (SPECT)
  - 6.2.1 Morphology, Dimensions, Volumes and Mass
  - 6.2.2 Systolic and Diastolic Function
  - 6.2.3 Ischaemia and Viability
  - 6.2.4 Inflammation, Infection, and Infiltrative Cardiovascular Disorders
  - 6.2.5 Innervation and Metabolism
- 6.3 Positron Emission Tomography (PET)
  - 6.3.1 Morphology, Dimensions, Volumes and Mass
  - 6.3.2 Systolic and Diastolic Function
  - 6.3.3 Ischaemia and Viability
  - 6.3.4 Inflammation, Infection, and Infiltrative Cardiovascular Disorders
  - 6.3.5 Innervation and Metabolism
- 6.4 Dimensions, Volumes and Mass
- 6.5 Systolic and Diastolic Function
  - 6.5.1 Radionuclide Angiography
- 6.6 Molecular Imaging

7 **Hybrid and Fusion Imaging**
- 7.1 Hybrid and Fusion Imaging

8 **Cross-Modality and Multi-Modality Imaging Topics**
- 8.1 Imaging of Cardiac Morphology, Dimensions, Volume, and Mass
- 8.2 Imaging of Systolic and Diastolic Function
- 8.3 Imaging of Valvular Heart Disease
- 8.4 Imaging of Arrhythmias
- 8.5 Imaging of Heart Failure
- 8.6 Imaging of Coronary Artery Disease
- 8.7 Imaging of Acute Coronary Syndromes
- 8.8 Imaging of Myocardial Disease
- 8.9 Imaging of Pericardial Disease
- 8.10 Imaging of Congenital Heart Disease
- 8.11 Imaging of Aortic Disease
- 8.12 Imaging of Peripheral Vascular Disease
- 8.13 Imaging in Prevention and Rehabilitation

C **ARRHYTHMIAS AND DEVICE THERAPY**

9 **Arrhythmias, General**
- 9.1 Pathophysiology and Mechanisms
  - 9.1.1 Cellular Mechanisms of Arrhythmias
  - 9.1.2 Genetic Aspects of Arrhythmias
  - 9.1.3 Ion Channel Disorders
- 9.2 Epidemiology, Prognosis, Outcome
- 9.3 Diagnostic Methods
  - 9.3.1 Electrocardiography (ECG)
  - 9.3.2 Signal-Averaged Electrocardiography
  - 9.3.3 Holter Monitoring
  - 9.3.4 Implantable Loop Recorder
  - 9.3.5 Photoplethysmography
  - 9.3.6 Wearables and m-Health
  - 9.3.7 Noninvasive Diagnostic Methods
  - 9.3.8 Invasive Diagnostic Methods
- 9.4 Treatment
  - 9.4.1 Lifestyle Modification
  - 9.4.2 Antiarrhythmic Drug Treatment
  - 9.4.3 Cardioversion and Defibrillation
  - 9.4.4 Catheter Ablation of Arrhythmias
    - *9.4.4.1 Energy Sources*
    - *9.4.4.2 Mapping Technology*
    - *9.4.4.3 Radiation Exposure*
  - 9.4.5 Device Treatment

9.5 Prevention
9.6 Clinical

10 Atrial Fibrillation (AF)

10.1 Pathophysiology and Mechanisms
- 10.1.1 Cellular Electrophysiology
- 10.1.2 Cell-Cell Interaction
- 10.1.3 Disease Modelling
- 10.1.4 Genetic Causes
  - *10.1.4.1 Monogenic Diseases Causing Atrial Fibrillation*
  - *10.1.4.2 Common Gene Variants Causing Atrial Fibrillation*
- 10.1.5 Atrial Stressors
  - *10.1.5.1 Ischaemia and Metabolic Imbalance*
  - *10.1.5.2 Heart Failure and Left Ventricular Dysfunction*
  - *10.1.5.3 Valvular Heart Disease*
  - *10.1.5.4 Sleep Disordered Breathing*
  - *10.1.5.5 Obesity and Diabetes*
  - *10.1.5.6 Autonomic Dysfunction*
  - *10.1.5.7 Sports and Atrial Fibrillation*
- 10.1.6 Defining Types of Atrial Fibrillation
- 10.1.7 Mechanisms for Stroke
- 10.1.8 Mechanisms for Heart Failure and Cardiac Complications

10.2 Epidemiology, Prognosis, Outcome
- 10.2.1 Prevalence and Incidence of Atrial Fibrillation
- 10.2.2 Stroke in Atrial Fibrillation
- 10.2.3 Heart Failure in Atrial Fibrillation
- 10.2.4 Sudden Death in Patients with Atrial Fibrillation
- 10.2.5 Cognitive Function and Autonomy in Patients with Atrial Fibrillation

10.3 Diagnostic Methods

10.4 Treatment
- 10.4.1 Acute Management
  - *10.4.1.1 Acute Rate Control and Cardioversion*
  - *10.4.1.2 Patient Flow*
- 10.4.2 Rate Control
  - *10.4.2.1 Rate Control Targets*
  - *10.4.2.2 Medical Therapy for Rate Control*
  - *10.4.2.3 Atrioventricular (AV) Nodal Ablation and Pacemaker Therapy*
  - *10.4.2.4 Outcome of Rate Control Therapy*
- 10.4.3 Rhythm Control, Cardioversion
  - *10.4.3.1 Pharmacological Cardioversion of Atrial Fibrillation*
    - *10.4.3.1.1 Treatment Pathway and Technique*
    - *10.4.3.1.2 Outcomes and Complications*
  - *10.4.3.2 Electrical Cardioversion of Atrial Fibrillation*
    - *10.4.3.2.1 Treatment Pathway and Technique*
    - *10.4.3.2.2 Outcomes and Complications*
  - *10.4.3.3 Stroke Prevention in Cardioversion*
    - *10.4.3.3.1 Oral Anticoagulation*
    - *10.4.3.3.2 Transoesophageal Echocardiography (TOE) Guidance*
- 10.4.4 Rhythm Control, Antiarrhythmic Drugs
  - *10.4.4.1 Indications and Patient Selection*
  - *10.4.4.2 Episodic Drug Therapy*
  - *10.4.4.3 Long-Term Drug Therapy*
  - *10.4.4.4 Outcomes and Complications*
- 10.4.5 Rhythm Control, Catheter Ablation
  - *10.4.5.1 Indications*
  - *10.4.5.2 Techniques and Technology*
  - *10.4.5.3 Outcomes and Complications*
- 10.4.6 Rhythm Control, Atrial Fibrillation Surgery
  - *10.4.6.1 Indications*
  - *10.4.6.2 Techniques and Technology*
  - *10.4.6.3 Outcomes and Complications*
- 10.4.7 Rhythm Control, Hybrid Therapy
  - *10.4.7.1 Atrial Fibrillation Heart Team*
  - *10.4.7.2 Combination of Drug Therapy and Ablation*
  - *10.4.7.3 Combination of Pacing and Drug Therapy/Ablation*

- 10.5 Stroke Prevention
  - 10.5.1 Oral Anticoagulation
    - *10.5.1.1 Indications*
    - *10.5.1.2 Long-Term Treatment, Adherence, Attrition*
    - *10.5.1.3 Oral Anticoagulant Drugs*
    - *10.5.1.4 Bleeding Complications*
    - *10.5.1.5 Reversal Agents*
  - 10.5.2 Left Atrial Appendage Closure
    - *10.5.2.1 Indications*
    - *10.5.2.2 Technology and Implantation Technique*
    - *10.5.2.3 Outcomes and Complications*
- 10.6 Stroke Treatment
  - 10.6.1 Imaging
  - 10.6.2 Acute Therapy
  - 10.6.3 Novel Therapies
  - 10.6.4 Heart Teams for Stroke Prevention
- 10.7 Prevention
- 10.8 Clinical

11 Supraventricular Tachycardia (Non-Atrial Fibrillation)

- 11.1 Pathophysiology and Mechanisms
  - 11.1.1 Cellular Mechanisms
  - 11.1.2 Genetic Aspects
- 11.2 Epidemiology, Prognosis, Outcome
- 11.3 Diagnostic Methods
- 11.4 Treatment
- 11.5 Prevention
- 11.6 Clinical
  - 11.6.1 Sinus Tachycardia
  - 11.6.2 Focal Atrial Tachycardia
  - 11.6.3 Macro-Reentrant Atrial Tachycardia and Flutter
  - 11.6.4 Atrioventricular (AV) Nodal and Junctional Tachycardias
  - 11.6.5 Accessory Pathway-Mediated Tachycardias

12 Syncope and Bradycardia

- 12.1 Pathophysiology and Mechanisms
  - 12.1.1 Sinus Node Dysfunction
  - 12.1.2 Atrioventricular (AV) Block
  - 12.1.3 Tachycardia
  - 12.1.4 Nonarrhythmogenic Mechanisms of Syncope
- 12.2 Epidemiology, Prognosis, Outcome
  - 12.2.1 Epidemiology
  - 12.2.2 Prognosis and Risk Stratification
- 12.3 Diagnostic Methods
  - 12.3.1 Ambulatory Electrocardiogram (ECG) Monitoring and Loop Recorders
  - 12.3.2 Provocation Tests, Assessment of Autonomous Nervous System
  - 12.3.3 Detection of Underlying Heart Disease
  - 12.3.4 Invasive Electrophysiological Evaluation
- 12.4 Treatment
  - 12.4.1 Drug Treatment
  - 12.4.2 Pacemaker Therapy
  - 12.4.3 Non-Device/Nonpharmacological Therapies (Tilt Training, Radiofrequency [RF] Ablation, etc.)
- 12.5 Prevention
- 12.6 Clinical

13 Ventricular Arrhythmias and Sudden Cardiac Death (SCD)

- 13.1 Pathophysiology and Mechanisms
  - 13.1.1 Coronary Artery Disease
  - 13.1.2 Idiopathic Dilated Cardiomyopathy
  - 13.1.3 Arrhythmogenic Right Ventricular Cardiomyopathy
  - 13.1.4 Hypertrophic Cardiomyopathy
  - 13.1.5 Other Nonischaemic Cardiomyopathies (Valvular, Neuromuscular, Infectious, Infiltrative, etc.)
  - 13.1.6 Ion Channel Disorders
    - *13.1.6.1 Brugada Syndrome*
    - *13.1.6.2 Long and short QT syndromes*

- *13.1.6.3 Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT)*
- *13.1.6.4 Other Genetic Variants*
- 13.1.7 Idiopathic Ventricular Arrhythmias
- *13.1.7.1 Outflow Tract Arrhythmias*
- *13.1.7.2 Fascicular Tachycardias*
- *13.1.7.3 Papillary Muscle*
- *13.1.7.4 Mitral/Tricuspid Annulus*
- *13.1.7.5 Bundle Branch Reentry Tachycardia*
- 13.2 Epidemiology, Prognosis, Outcome
- 13.2.1 Epidemiology
- 13.2.2 Risk Factors and Risk Assessment
- 13.3 Diagnostic Methods
- 13.4 Treatment
- 13.4.1 Management of Out-of-Hospital Cardiac Arrest
- *13.4.1.1 Cardiopulmonary Resuscitation*
- *13.4.1.2 First Responder Help Systems*
- *13.4.1.3 Automated External Defibrillators (AED)*
- *13.4.1.4 Acute in-Hospital Management*
- *13.4.1.5 Enhanced Cardiopulmonary Resuscitation (eCPR)*
- 13.4.2 Drug Treatment of Ventricular Arrhythmias
- 13.4.3 Ablation of Ventricular Arrhythmias
- *13.4.3.1 Catheter Ablation*
- *13.4.3.2 Non-Catheter based Ablation*
- 13.4.4 Device Treatment
- *13.4.4.1 Wearable Defibrillator (WCD)*
- *13.4.4.2 Implantable Cardioverter-Defibrillator (ICD)*
- 13.4.5 Radiotherapy
- 13.5 Prevention
- 13.6 Clinical

14 Device Therapy

- 14.1 Antibradycardia Pacing
- 14.2 Implantable Cardioverter-Defibrillator (ICD)
- 14.3 Cardiac Resynchronisation Therapy (CRT)
- 14.4 Home and Remote Patient Monitoring
- 14.5 Device Complications and Lead Extraction

D HEART FAILURE

15 Chronic Heart Failure

- 15.1 Pathophysiology and Mechanisms
- 15.1.1 Pathophysiology
- 15.1.2 Experimental Heart Failure
- 15.1.3 Cardiotoxicity of Drugs and Other Therapies
- 15.1.4 Haemodynamics of Heart Failure
- 15.1.5 Systolic Ventricular Dysfunction
- 15.1.6 Diastolic Ventricular Dysfunction
- 15.1.7 Ventricular Remodelling
- 15.1.8 Heart Failure with Reduced Ejection Fraction (HFrEF)
- 15.1.9 Heart Failure with Mid-Range Ejection Fraction (HFmrEF)
- 15.1.10 Heart Failure with Preserved Ejection Fraction (HFpEF)
- 15.2 Epidemiology, Prognosis, Outcome
- 15.3 Diagnostic Methods
- 15.3.1 Biomarkers
- 15.3.2 Imaging
- *15.3.2.1 Echocardiography*
- *15.3.2.2 Cardiac Magnetic Resonance (CMR)*
- 15.4 Treatment
- 15.4.1 Lifestyle Modification
- 15.4.2 Pharmacotherapy
- 15.4.3 Rehabilitation
- 15.4.4 Implantable Cardioverter-Defibrillator (ICD)
- 15.4.5 Cardiac Resynchronisation Therapy (CRT)
- 15.4.6 Ventricular Assist Devices
- 15.4.7 Heart Transplantation

15.4.8 Devices for Autonomic Modulation
15.4.9 Multidisciplinary Interventions
15.5 Prevention
15.6 Clinical
15.6.1 Peripheral Circulation, Metabolism, Skeletal Muscle
15.6.2 Comorbidities
15.6.2.1 Anaemia/Iron Deficiency
15.6.2.2 Cancer
15.6.2.3 Cerebrovascular Disease
15.6.2.4 Chronic Kidney Disease
15.6.2.5 Chronic Obstructive Pulmonary Disease
15.6.2.6 Dementia/Depression
15.6.2.7 Diabetes
15.6.2.8 Frailty
15.6.2.9 Muscular Dystrophy
15.6.2.10 Thyroid Disease
15.6.2.11 Sleep Apnoea

16 Acute Heart Failure
16.1 Pathophysiology and Mechanisms
16.1.1 Haemodynamics
16.2 Epidemiology, Prognosis, Outcome
16.3 Diagnostic Methods
16.3.1 Biomarkers
16.3.2 Imaging
16.3.3 Invasive Haemodynamic Monitoring
16.4 Treatment
16.4.1 Pharmacotherapy
16.4.2 Nonpharmacological Treatment
16.4.2.1 Circulatory Support
16.4.2.2 Renal Replacement Therapy
16.4.3 Multidisciplinary Interventions
16.5 Prevention
16.6 Clinical
16.6.1 Acute Myocarditis
16.6.2 Acute Pericarditis
16.6.3 Acute Coronary Syndromes
16.6.4 Cardiogenic Shock
16.6.4.1 Definitions, Pathophysiology and Mechanisms
16.6.4.2 Imaging
16.6.4.3 Acute Percutaneous Mechanical Circulatory Support

E CORONARY ARTERY DISEASE, ACUTE CORONARY SYNDROMES, ACUTE CARDIAC CARE

17 Coronary Artery Disease (Chronic) / Chronic Coronary Syndromes (CCS)
17.1 Pathophysiology and Mechanisms
17.1.1 Chronic Ischaemia
17.1.2 Coronary Circulation, Flow, and Flow Reserve
17.1.3 Coronary Microcirculation and Collaterals
17.1.4 Inflammation and Immunity
17.1.5 Hibernation
17.2 Epidemiology, Prognosis, Outcome
17.3 Diagnostic Methods
17.3.1 Noninvasive Diagnostic Methods
17.3.2 Angiography, Invasive Imaging
17.3.3 Intracoronary Flow and Pressure Measurements
17.3.3.1 Fractional Flow Reserve (FFR)
17.3.3.2 Non-hyperaemic Coronary Pressure Indices
17.3.3.3 Coronary Flow Reserve
17.4 Treatment
17.4.1 Lifestyle Modification
17.4.2 Nonpharmacological Treatment
17.4.3 Pharmacotherapy
17.4.4 Revascularisation
17.4.4.1 Percutaneous Coronary Intervention (PCI)

- *20.3.1.4 Nuclear Imaging*
- 20.3.2 Invasive Haemodynamic Assessment

20.4 Treatment
- 20.4.1 Pharmacotherapy
- 20.4.2 Intervention
  - *20.4.2.1 Aortic Valve Stenosis*
  - *20.4.2.2 Aortic Valve Regurgitation*
  - *20.4.2.3 Mitral Valve Stenosis*
  - *20.4.2.4 Mitral Valve Regurgitation*
  - *20.4.2.5 Pulmonary Valve Stenosis*
  - *20.4.2.6 Pulmonary Valve Regurgitation*
  - *20.4.2.7 Tricuspid Valve Stenosis*
  - *20.4.2.8 Tricuspid Valve Regurgitation*
- 20.4.3 Surgery

20.5 Prevention

20.6 Clinical
- 20.6.1 Aortic Valve Stenosis
- 20.6.2 Aortic Valve Regurgitation
- 20.6.3 Aortic Valve Disease, Other
- 20.6.4 Mitral Valve Stenosis
- 20.6.5 Mitral Valve Regurgitation
  - *20.6.5.1 Primary Mitral Valve Regurgitation*
  - *20.6.5.2 Secondary Mitral Valve Regurgitation*
- 20.6.6 Mitral Valve Prolapse
- 20.6.7 Mitral Valve Disease, Other
- 20.6.8 Tricuspid Valve Disease
- 20.6.9 Pulmonary Valve Disease
- 20.6.10 Rheumatic Heart Disease
- 20.6.11 Prosthetic Heart Valves

21 Infective Endocarditis

21.1 Pathophysiology and Mechanisms

21.2 Epidemiology, Prognosis, Outcome

21.3 Diagnostic Methods
- 21.3.1 Imaging
- 21.3.2 Microbiology

21.4 Treatment
- 21.4.1 Pharmacotherapy
- 21.4.2 Surgery

21.5 Prevention

21.6 Clinical

21.7 Cardiac Implantable Device-Related Endocarditis

22 Myocardial Disease

22.1 Pathophysiology and Mechanisms

22.2 Epidemiology, Prognosis, Outcome

22.3 Diagnostic Methods
- 22.3.1 Imaging
  - *22.3.1.1 Echocardiography*
  - *22.3.1.2 Cardiac Computed Tomography (CT)*
  - *22.3.1.3 Cardiac Magnetic Resonance (CMR)*
  - *22.3.1.4 Nuclear Imaging*

22.4 Treatment
- 22.4.1 Pharmacotherapy

22.5 Prevention

22.6 Clinical
- 22.6.1 Myocarditis
- 22.6.2 Hypertrophic Cardiomyopathy
- 22.6.3 Dilated Cardiomyopathy
- 22.6.4 Restrictive Cardiomyopathy and Loeffler´s Disease
- 22.6.5 Arrhythmogenic Right Ventricular Cardiomyopathy
- 22.6.6 Hypertensive Heart Disease

- 22.6.7 Infiltrative Myocardial Disease
  - *22.6.7.1 Cardiac Amyloidosis*
  - *22.6.7.2 Cardiac Sarcoidosis*
  - *22.6.7.3 Fabry´s Disease*
  - *22.6.7.4 Mucopolysaccharidosis (MPS)*
- 22.6.8 Chagas' Disease
- 22.6.9 Takotsubo Cardiomyopathy
- 22.6.10 Peripartum Cardiomyopathy
- 22.6.11 Ventricular Noncompaction

23 Pericardial Disease

- 23.1 Pathophysiology and Mechanisms
- 23.2 Epidemiology, Prognosis, Outcome
- 23.3 Diagnostic Methods
  - 23.3.1 Imaging
    - *23.3.1.1 Echocardiography*
    - *23.3.1.2 Cardiac Computed Tomography (CT)*
    - *23.3.1.3 Cardiac Magnetic Resonance (CMR)*
    - *23.3.1.4 Nuclear Imaging*
- 23.4 Treatment
  - 23.4.1 Pharmacotherapy
  - 23.4.2 Intervention and Surgery
- 23.5 Prevention
- 23.6 Clinical
  - 23.6.1 Pericarditis
  - 23.6.2 Pericardial Effusion
  - 23.6.3 Pericardial Constriction

24 Tumours of the Heart

- 24.1 Pathophysiology and Mechanisms
- 24.2 Epidemiology, Prognosis, Outcome
- 24.3 Diagnostic Methods
  - 24.3.1 Imaging
    - *24.3.1.1 Echocardiography*
    - *24.3.1.2 Cardiac Computed Tomography (CT)*
    - *24.3.1.3 Cardiac Magnetic Resonance (CMR)*
    - *24.3.1.4 Nuclear Imaging*
- 24.4 Treatment
- 24.5 Prevention
- 24.6 Clinical
  - 24.6.1 Myxoma

25 Congenital Heart Disease and Paediatric Cardiology

- 25.1 Pathophysiology and Mechanisms
- 25.2 Epidemiology, Prognosis, Outcome
- 25.3 Diagnostic Methods
  - 25.3.1 Imaging
    - *25.3.1.1 Echocardiography*
    - *25.3.1.2 Cardiac Computed Tomography (CT)*
    - *25.3.1.3 Cardiac Magnetic Resonance (CMR)*
    - *25.3.1.4 Nuclear Imaging*
  - 25.3.2 Invasive Haemodynamic Assessment
- 25.4 Treatment
  - 25.4.1 Lifestyle Modification
  - 25.4.2 Pharmacotherapy
  - 25.4.3 Intervention
  - 25.4.4 Surgery
- 25.5 Prevention
- 25.6 Clinical
  - 25.6.1 Foetal Heart Disease
  - 25.6.2 Adult Congenital Heart Disease (ACHD)
- 25.7 Paediatric Cardiology

26 Pulmonary Circulation, Pulmonary Embolism, Right Heart Failure

- 26.1 Pathophysiology and Mechanisms
- 26.2 Epidemiology, Prognosis, Outcome
- 26.3 Diagnostic Methods
- 26.4 Treatment
  - 26.4.1 Pharmacotherapy
  - 26.4.2 Intervention
  - 26.4.3 Surgery
- 26.5 Prevention
- 26.6 Clinical
  - 26.6.1 Pulmonary Embolism (PE)
    - *26.6.1.1 Acute Pulmonary Embolism*
    - *26.6.1.2 Long-Term Pulmonary Thromboembolic Disease*
  - 26.6.2 Venous Thromboembolism
  - 26.6.3 Pulmonary Hypertension

G DISEASES OF THE AORTA, PERIPHERAL VASCULAR DISEASE, STROKE

27 Diseases of the Aorta

- 27.1 Pathophysiology and Mechanisms
- 27.2 Epidemiology, Prognosis, Outcome
- 27.3 Diagnostic Methods
  - 27.3.1 Imaging
    - *27.3.1.1 Echocardiography*
    - *27.3.1.2 Cardiac Computed Tomography (CT)*
    - *27.3.1.3 Cardiac Magnetic Resonance (CMR)*
    - *27.3.1.4 Nuclear Imaging*
- 27.4 Treatment
  - 27.4.1 Lifestyle Modification
  - 27.4.2 Pharmacotherapy
  - 27.4.3 Intervention
  - 27.4.4 Surgery
- 27.5 Prevention
- 27.6 Clinical
  - 27.6.1 Aortic Dissection, Acute Intramural Haematoma
    - *27.6.1.1 Dissection Thoracic Aorta*
    - *27.6.1.2 Dissection Abdominal Aorta*
  - 27.6.2 Aortic Aneurysm, Thoracic
  - 27.6.3 Aortic Aneurysm, Abdominal
  - 27.6.4 Inflammatory Diseases of the Aorta
  - 27.6.5 Traumatic Injury of the Aorta

28 Peripheral Vascular and Cerebrovascular Disease

- 28.1 Pathophysiology and Mechanisms
- 28.2 Epidemiology, Prognosis, Outcome
- 28.3 Diagnostic Methods
- 28.4 Treatment
  - 28.4.1 Lifestyle Modification
  - 28.4.2 Pharmacotherapy
  - 28.4.3 Intervention
  - 28.4.4 Surgery
- 28.5 Prevention
- 28.6 Clinical
  - 28.6.1 Peripheral Artery Disease
  - 28.6.2 Carotid Disease
  - 28.6.3 Venous Disease

29 Stroke

- 29.1 Pathophysiology and Mechanisms
- 29.2 Epidemiology, Prognosis, Outcome
- 29.3 Diagnostic Methods
- 29.4 Treatment
  - 29.4.1 Lifestyle Modification
  - 29.4.2 Pharmacotherapy

29.4.3 Acute Intervention
29.4.4 Surgery
29.5 Prevention
29.6 Clinical
29.6.1 Carotid Stenosis
29.6.2 Patent Foramen Ovale and Patent Foramen Ovale (PFO) Closure
29.6.3 Cardiogenic Embolism
29.6.3.1 Atrial Fibrillation
29.6.3.2 Left Atrial Appendage (LAA) and Left Atrial Appendage (LAA) Closure
29.7 Heart and Brain Interaction

H INTERVENTIONAL CARDIOLOGY AND CARDIOVASCULAR SURGERY

30 Interventional Cardiology

30.1 Invasive Imaging and Functional Assessment
30.1.1 Right Heart Catheterisation
30.1.2 Coronary Angiography
30.1.3 Peripheral Angiography
30.1.4 Intracoronary Ultrasound
30.1.5 Optical Coherence Tomography
30.1.6 Near Infrared Spectroscopy
30.1.7 Angioscopy
30.1.8 Intracoronary Flow and Pressure Measurements
30.1.8.1 Fractional Flow Reserve (FFR)
30.1.8.2 Non-hyperaemic Coronary Pressure Indices
30.1.8.3 Coronary Flow Reserve
30.1.9 Coronary Vasoreactivity Testing
30.2 Percutaneous Coronary Intervention (PCI)
30.2.1 Adjunctive Pharmacotherapy
30.2.2 Vascular Access
30.2.3 Technique
30.2.4 Devices
30.2.4.1 Balloons
30.2.4.2 Stents
30.2.4.3 Rotablation
30.2.4.4 Orbital Atherectomy
30.2.4.5 Intravascular Lithoplasty (IVL)
30.2.5 Complications
30.2.6 Primary Percutaneous Coronary Intervention (PCI)
30.2.7 Chronic Total Occlusion (CTO)
30.2.8 Protected Percutaneous Coronary Intervention (PCI)
30.2.9 Restenosis
30.2.10 Stent Thrombosis
30.2.11 Outcome
30.3 Noncoronary Cardiac Intervention
30.3.1 Aortic Valve Intervention
30.3.2 Mitral Valve Intervention
30.3.3 Tricuspid Valve Intervention
30.3.4 Pulmonary Valve Intervention
30.3.5 Patent Foramen Ovale (PFO) / Atrial Septal Defect (ASD) Closure
30.3.6 Left Atrial Appendage (LAA) Closure
30.3.7 Closure of Paravalvular Leaks

31 Cardiovascular Surgery

31.1 Coronary Arteries
31.2 Valves
31.3 Congenital Heart Disease
31.4 Aorta
31.5 Carotid and Peripheral Arteries
31.6 Ventricular Assist Devices and Artificial Heart
31.7 Circulatory Support
31.8 Transplantation
31.9 Arrhythmias

31.10 Minimally Invasive Surgery

I HYPERTENSION

32 Hypertension

32.1 Pathophysiology and Mechanisms
- 32.1.1 Target Organ Damage/Left Ventricular Hypertrophy
- 32.1.2 Renin-Angiotensin System
- 32.1.3 Secondary Hypertension
  - *32.1.3.1 Renal and Renovascular Hypertension*
  - *32.1.3.2 Autonomic Nervous System*
  - *32.1.3.3 Endocrine Hypertension*
  - *32.1.3.4 Drug Induced Hypertension*
  - *32.1.3.5 Pregnancy-induced Hypertension*

32.2 Epidemiology, Prognosis, Outcome

32.3 Diagnostic Methods
- 32.3.1 Blood Pressure Measurement

32.4 Treatment
- 32.4.1 Lifestyle Modification
- 32.4.2 Pharmacotherapy
- 32.4.3 Device Treatment and Intervention
  - *32.4.3.1 Renal Denervation*

32.5 Prevention

32.6 Clinical

J PREVENTIVE CARDIOLOGY

33 Risk Factors and Prevention

33.1 Epidemiology

33.2 Cardiovascular Risk Assessment
- 33.2.1 Scores
- 33.2.2 Biomarkers
- 33.2.3 Imaging

33.3 Secondary Prevention

33.4 Lipids
- 33.4.1 Drug therapy

33.5 Tobacco

33.6 Obesity

33.7 Diabetes and the Heart
- 33.7.1 Pathophysiology
- 33.7.2 Metabolic Syndrome, Insulin, Insulin Resistance
- 33.7.3 Pharmacotherapy
- 33.7.4 Percutaneous Coronary Intervention (PCI) and Surgery

33.8 Environmental and Occupational Aspects of Heart Disease
- 33.8.1 Environmental Aspects of Heart Disease
- 33.8.2 Occupational Aspects of Heart Disease

33.9 Stress, Psychosocial and Cultural Aspects of Heart Disease

33.10 Depression and Heart Disease

33.11 Nutrition, Malnutrition and Heart Disease

33.12 Physical Inactivity and Exercise
- 33.12.1 Physical Inactivity
- 33.12.2 Exercise

33.13 Sleep Disorders
- 33.13.1 Sleep Apnoea

34 Rehabilitation and Sports Cardiology

34.1 Exercise Testing
- 34.1.1 Spiroergometry

34.2 Cardiovascular Rehabilitation
- 34.2.1 Exercise Programmes
- 34.2.2 Education
- 34.2.3 Outcomes

34.3 Sports Cardiology
- 34.3.1 Athlete´s Heart
- 34.3.2 Electrocardiography (ECG)

34.3.3 Arrhythmias
34.3.4 Sudden Death in Sports
34.3.5 Pre-Competition Screening and Sports Eligibility
34.3.6 Cardiovascular Effects of Substance Abuse/Doping

K CARDIOVASCULAR DISEASE IN SPECIAL POPULATIONS

35 Cardiovascular Disease in Special Populations

35.1 Cardiovascular Disease in Primary Care
35.2 Cardiovascular Disease in Women
35.3 Cardiovascular Disease in Special Populations: Paediatric Cardiology
35.4 Noncardiac Surgery / Presurgical Assessment
35.5 Cardiovascular Disease in the Elderly
35.6 Cardio-Oncology
35.7 Pregnancy and Cardiovascular Disease
35.8 HIV and Cardiovascular Disease
35.9 Renal Failure and Cardiovascular Disease
35.10 Neurologic Disorders and Heart Disease
35.11 Psychiatric Disorders and Heart Disease
35.12 Autoimmune/Chronic Inflammatory Disorders and Heart Disease
35.13 Substance Abuse and Cardiovascular Disease

L CARDIOVASCULAR PHARMACOLOGY

36 Pharmacology and Pharmacotherapy

36.1 Cardiovascular Pharmacotherapy
36.1.1 Aldosterone Antagonists
36.1.2 Antiarrhythmic Pharmacotherapy
36.1.3 Angiotensin-Renin-Bradykinin System
36.1.4 Anticoagulants
36.1.5 Antiplatelet Drugs
36.1.6 Beta-Blockers
36.1.7 Calcium Channel Blockers
36.1.8 Diuretics
36.1.9 Nitrates
36.1.10 Lipid-Lowering Agents
36.1.10.1 Statins
36.1.10.2 Cholesterol Resorption Antagonists
36.1.10.3 LDL-Receptor Antagonists
36.1.10.4 PCSK9-Antagonists
36.1.11 Antidiabetic Pharmacotherapy
36.2 Pharmacogenetics
36.3 Biotherapies
36.4 Cardiotoxicity of Drugs

M CARDIOVASCULAR NURSING AND ALLIED PROFESSIONS

37 Cardiovascular Nursing and Allied Professions

37.1 Acute Nursing Care
37.2 Chronic Nursing Care
37.3 Advanced Clinical Practice
37.4 Allied Professions in Cardiovascular Care

N e-CARDIOLOGY / DIGITAL HEALTH, PUBLIC HEALTH, HEALTH ECONOMICS, RESEARCH METHODOLOGY

38 e-Cardiology/Digital Health

38.1 Artificial Intelligence
38.1.1 Data Synthesis
38.1.2 Deep Learning
38.1.3 Machine Learning
38.2 Big Data
38.2.1 Big Data analysis
38.2.2 Statistical Methods
38.3 Cardiovascular Image Processing
38.3.1 Computerised Tomography
38.3.2 Magnetic Resonance Imaging
38.3.3 Infrared
38.3.4 Ultrasound
38.3.5 Virtual-, Mixed-, and Augmented Reality
38.3.6 X-ray and Angiography

38.4 Cardiovascular Signal Processing
38.4.1 Digital Auscultation
38.4.2 Electrocardiogram (ECG) and Arrhythmia Analysis
38.4.3 Speech Analysis
38.5 Computer Modelling and Simulation
38.5.1 In-Silico Medicine and Virtual Physiologic Patient
38.5.2 Modelling / Digital Twins
38.6 Cybersecurity
38.7 Digital Health Tools
38.7.1 Multimodal
38.7.2 Robotics
38.7.3 Wearables
38.8 Disease Classification
38.9 Electronic Health Records & Hospital Information Systems
38.9.1 Interoperability, Standards and System Integration
38.9.2 Clinical Decision Support
38.10 Large Language Model
38.11 Patient Engagement and Personalised Health
38.12 Precision Medicine
38.13 Remote Patient Monitoring and Telehealth
38.13.1 m-Health & Mobile Apps
38.13.2 Remote Patient Monitoring
38.13.3 Remote Consultation
38.13.4 Virtual Hospital
38.14 Regulatory Affairs and Ethics
38.15 Statistical Methods
38.16 Surgical Data Science

39 Public Health and Health Economics
39.1 Public Health
39.2 Health Policy
39.3 Health Economics

40 Research Methodology
40.1 Biostatistics
40.2 Cardiovascular Epidemiology
40.3 Trial Design
40.4 Research Ethics

O BASIC SCIENCE

41 Basic Science
41.1 Cardiovascular Development and Anatomy
41.1.1 Stem Cells, Cell Cycle, Cell Senescence, Cell Death
41.1.2 Genetics, Epigenetics, ncRNA
41.2 Cardiac Biology and Physiology
41.2.1 Stem Cells, Cell Cycle, Cell Senescence, Cell Death
41.2.2 Genetics, Epigenetics, ncRNA
41.2.3 Signal Transduction, Mechanotransduction
41.2.4 Ion Channels, Electrophysiology
41.2.5 Mitochondria
41.2.6 Microvesicles, Exosomes
41.2.7 Metabolism
41.2.8 Leukocytes, Inflammation, Immunity
41.2.9 Biomaterials, Tissue Engineering
41.3 Cardiac Diseases
41.3.1 Ischaemia, Infarction, Cardioprotection
41.3.2 Cardiac Hypertrophy
41.3.3 Heart Failure
41.3.4 Arrhythmias
41.3.5 Cardiomyopathies
41.3.6 Valvular Heart Disease
41.3.7 Congenital Heart Disease
41.3.8 Leukocytes, Inflammation, Immunity
41.3.9 Fibrosis
41.3.10 Drugs, Drug Targets
41.3.11 Gene Therapy, Cell Therapy
41.3.12 Biomarkers

41.4 Vascular Biology and Physiology
- 41.4.1 Stem Cells, Cell Cycle, Cell Senescence, Cell Death
- 41.4.2 Genetics, Epigenetics, ncRNA
- 41.4.3 Signal Transduction, Mechanotransduction
- 41.4.4 Vascular Tone, Permeability, Microcirculation
- 41.4.5 Ion Channels, Electrophysiology
- 41.4.6 Mitochondria
- 41.4.7 Microvesicles, Exosomes
- 41.4.8 Lipids, Metabolism
- 41.4.9 Platelets, Haemostasis, Coagulation
- 41.4.10 Leukocytes, Inflammation, Immunity
- 41.4.11 Biomaterials, Tissue Engineering

41.5 Vascular Diseases
- 41.5.1 Microcirculation, Angiogenesis, Arteriogenesis
- 41.5.2 Atherosclerosis, Cerebrovascular Diseases, Aneurysm, Restenosis
- 41.5.3 Hypertension, Pulmonary Hypertension
- 41.5.4 Thrombosis, Bleeding
- 41.5.5 Lipid Metabolism, Metabolic Syndrome, Diabetes
- 41.5.6 Leukocytes, Inflammation, Immunity
- 41.5.7 Vascular Diseases: Fibrosis
- 41.5.8 Drugs, Drug Targets
- 41.5.9 Gene Therapy, Cell Therapy
- 41.5.10 Biomarkers