

# ESC Congress 2022 – 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 choice will determine under which area the abstract will be reviewed and graded.

Therefore, submitters should consider all potential options available before selecting the submission topic.

The topic list is organised by main topics and several layers of subtopics to maximize 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. If the abstract is accepted, presenters will be required to select 3 additional topics/keywords at the time of the upload of the presentation. These are important to optimise indexing of the abstract in the programme and in ESC 365, the cardiology knowledge hub. This serves to optimise search results and enhance visibility of the research.

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, 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

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## **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

**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])
  - 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)*
      - 17.4.4.2 *Bypass Surgery*
  - 17.5 Prevention

- 17.6 Clinical
  - 17.6.1 Comorbidities
- 17.7 Nonatherosclerotic Coronary Abnormalities
- 18 Acute Coronary Syndromes**
  - 18.1 Pathophysiology and Mechanisms
    - 18.1.1 Acute Myocardial Ischaemia
    - 18.1.2 Thrombosis, Platelets, and Coagulation
    - 18.1.3 Inflammation
    - 18.1.4 Vulnerable Plaque
    - 18.1.5 Vasospasm
    - 18.1.6 Spontaneous Coronary Artery Dissection (SCAD)
    - 18.1.7 Reperfusion and Reperfusion Injury
    - 18.1.8 Left Ventricular Remodelling
    - 18.1.9 No Reflow
  - 18.2 Epidemiology, Prognosis, Outcome
  - 18.3 Diagnostic Methods
    - 18.3.1 Biomarkers
    - 18.3.2 Noninvasive Imaging
    - 18.3.3 Angiography, Invasive Imaging
    - 18.3.4 Intracoronary Flow and Pressure Measurements
      - 18.3.4.1 Fractional Flow Reserve (FFR)
      - 18.3.4.2 Non-hyperaemic Coronary Pressure Indices
      - 18.3.4.3 Coronary Flow Reserve
  - 18.4 Treatment
    - 18.4.1 Lifestyle Modification
    - 18.4.2 Pharmacotherapy
      - 18.4.2.1 Antiplatelet Agents
      - 18.4.2.2 Thrombolysis/Fibrinolysis
      - 18.4.2.3 Statins
    - 18.4.3 Revascularisation
      - 18.4.3.1 Coronary Intervention
      - 18.4.3.2 Bypass Surgery
  - 18.5 Prevention
  - 18.6 Clinical
    - 18.6.1 ST-Elevation Myocardial Infarction (STEMI)
    - 18.6.2 Non-ST-Elevation Myocardial Infarction (NSTEMI)
    - 18.6.3 Unstable Angina
    - 18.6.4 Shock
    - 18.6.5 Mechanical Complications
    - 18.6.6 Postinfarction Period
    - 18.6.7 Myocardial Infarction with Nonobstructive Coronary Arteries (MINOCA)
    - 18.6.8 Takotsubo Cardiomyopathy
    - 18.6.9 Spontaneous Coronary Artery Dissection (SCAD)
- 19 Acute Cardiac Care**
  - 19.1 Resuscitation
  - 19.2 Prehospital and Emergency Department Care
  - 19.3 Cardiac Care Unit (CCU), Intensive, and Critical Cardiovascular Care
  - 19.4 Cardiogenic Shock
  - 19.5 Cardiac Arrest
- F VALVULAR, MYOCARDIAL, PERICARDIAL, PULMONARY, CONGENITAL HEART DISEASE**
- 20 Valvular Heart Disease**
  - 20.1 Pathophysiology and Mechanisms
  - 20.2 Epidemiology, Prognosis, Outcome
  - 20.3 Diagnostic Methods
    - 20.3.1 Imaging
      - 20.3.1.1 Echocardiography
      - 20.3.1.2 Cardiac Computed Tomography (CT)
      - 20.3.1.3 Cardiac Magnetic Resonance (CMR)
      - 20.3.1.4 Nuclear Imaging
    - 20.3.2 Invasive Haemodynamic Assessment



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- 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**
- 30 INTERVENTIONAL CARDIOLOGY AND CARDIOVASCULAR SURGERY**
- 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

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## **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, Psycho-Social 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 Cardiovascular Image Processing
- 38.2 Cardiovascular Signal Processing
  - 38.2.1 Electrocardiogram (ECG) and Arrhythmia Analysis
- 38.3 Artificial Intelligence (Machine Learning, Deep Learning)
- 38.4 Big Data and Digital Twin
- 38.5 In-Silico Medicine and Virtual Physiologic Patient
- 38.6 Hospital Information Systems, Electronic Medical Records, Clinical Decision Support
  - 38.6.1 Hospital Information Systems
  - 38.6.2 Electronic Medical Records
  - 38.6.3 Clinical Decision Support
- 38.7 Remote Patient Monitoring and Telehealth
  - 38.7.1 Remote Patient Monitoring
  - 38.7.2 Telehealth
  - 38.7.3 Remote Consultation
- 38.8 Mobile Apps
- 38.9 Patient Engagement and Personalised Health
- 38.10 Interoperability, Standards and System Integration

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- 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 Big Data Analysis  
40.3 Cardiovascular Epidemiology  
40.4 Trial Design  
40.5 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