ESC Congress 2021 – The Digital Experience

Topics for Abstract Submission

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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
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 Indications
10.5.2 Long-Term Treatment, Adherence, Attrition
10.5.3 Oral Anticoagulant Drugs
10.5.4 Bleeding Complications
10.5.5 Reversal Agents
10.5.6 Left Atrial Appendage Closure
10.5.7 Technology and Implantation Technique
10.5.8 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 Anti-bradycardia 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

15 HEART FAILURE

15.1 Chronic Heart Failure
15.1.1 Pathophysiology and Mechanisms
15.1.2 Pathophysiology
15.1.3 Experimental Heart Failure
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
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
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

30 Interventional Cardiology and Cardiovascular Surgery

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, 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
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