Contents

PART 1

PEDIATRIC CARDIOLOGY FOUNDATIONS

SECTION 1 INTRODUCTION TO THE SPECIALTY OF PEDIATRIC CARDIOLOGY

1. **Epidemiology and Burden of Pediatric Heart Disease in India** 3
   Anita Saxena, Sakshi Sachdeva

SECTION 2 FUNDAMENTALS OF PEDIATRIC CARDIOLOGY

2. **Anatomy of the Heart: An Overview** 11
   Sanjeev H Naganur, Balaji Srimurugan, Saurabh Kumar Gupta
3. **Embryology** 18
   Sanjeev H Naganur, Balaji Srimurugan, Saurabh Kumar Gupta
4. **Physiology: Essential Hemodynamics and Basic Electrophysiology** 24
   Raghavan Subramanyan

SECTION 3 DIAGNOSTIC TOOLS

5. **Cardiovascular System: History and Physical Examination** 33
   M Zulfikar Ahamed, R Krishna Kumar
6. **Screening for Congenital Heart Disease** 54
   Navaneetha Sasikumar
7. **The Electrocardiogram, Ambulatory ECG and Exercise Testing** 60
   Mani Ram Krishna
8. **The Chest X-ray** 78
   Munesh Tomar
9. **Echocardiography: What Pediatricians Should Know?** 93
   Praveen Kumar K, Sunita Maheshwari, Sejal Shah
10. **Advanced Cardiac Imaging: Computed Tomography and Magnetic Resonance Imaging** 117
    Mahesh Kappanayil
11. **Diagnostic Cardiac Catheterization and Angiography** 123
    Arun Gopalakrishnan

SECTION 4 THERAPEUTIC TOOLS

12. **Essential Cardiovascular Pharmacology: Common Drugs in Pediatric Cardiac Practice** 135
    Balaganesh Karmegaraj, Alice Neetha, R Krishna Kumar

13. **Pediatric Cardiac Intensive Care** 165
Vishal Singh

14. **Catheter-based Interventions** 190
Shreepal Jain

15. **Principles of Pediatric Cardiac Surgery** 207
Biswa Panda, Balaji Srimurugan

16. **Counseling Families of Children with Heart Disease** 226
Sangeetha Viswanathan

PART 2

PEDIATRIC CARDIOVASCULAR DISEASE

SECTION 5 MEDICAL ISSUES

17. **Heart Failure in Children** 235
Sumitra Venkatesh, R Krishna Kumar

18. **Pulmonary Hypertension in Children** 252
Shine Kumar KH

19. **Syncope** 262
Mani Ram Krishna

SECTION 6 CONGENITAL HEART DEFECTS

20. **Congenital Heart Disease** 267
R Krishna Kumar, Anil Kumar Singhi

21. **Atrial Septal Defect** 280
Sudeep Verma, Vejendla Gouthami

22. **Ventricular Septal Defect** 291
Nageswara Rao Koneti

23. **Patent Ductus Arteriosus** 305
Anand Subramanian, M Jayranganath

24. **Aortopulmonary Window and Other Aortic Shunts** 313
MK Usha, M Jayranganath

25. **Atrioventricular Septal Defect** 320
Navaneetha Sasikumar

26. **Pulmonary and Systemic Venous Anomalies** 328
Arun Gopalakrishnan, Harikrishnan KN

27. **Coronary Artery Abnormalities** 344
Jayashree Mishra

28. **Left Heart Outflow Obstruction** 353
Nikhil Thatte

29. **Aortic Arch Obstruction: Coarctation and Aortic Arch Interruption** 361
Sangeetha Viswanathan

30. **Vascular Rings and Slings** 371
Shweta Bakhru

31. **Right Ventricular Outflow Obstruction** 387
Edwin Francis, Annu Jose

32. **Pulmonary Atresia with Intact Ventricular Septum** 394
Preeti Ramachandran, Vasu Gooty

33. **Ebstein Anomaly of Tricuspid Valve** 398
Renu P Kurup

34. **Tetralogy of Fallot** 410
Sushil Azad

35. **Persistent Truncus Arteriosus** 418
Saileela Rajan

36. **Transposition of Great Arteries** 426
R Suresh Kumar, John Valliattu

37. **Double Outlet Right Ventricle** 438
KS Remadevi

38. **Corrected Transposition** 446
Nitin Rao, Suman Vyas

39. **Univentricular Hearts** 457
K Sivakumar

40. **Isomerism (Aka Heterotaxy): What Does it Mean and What Does it Do?** 468
Rohit S Loomba, Diane E Spicer, Robert Anderson

SECTION 7 ACQUIRED HEART DISEASE

41. **Infective Endocarditis** 481
Ritchie Sharon Solomon

42. **Rheumatic Fever and Rheumatic Heart Disease** 494
M Zulfikar Ahamed

43. **Myocarditis** 518
Navaneetha Sasikumar

44. **Kawasaki Disease** 528
Saji Philip, M Zulfikar Ahamed, Priyankar Pal, Surjit Singh, R Krishna Kumar

45. **Cardiomyopathy** 542
Mani Ram Krishna

46. **Pericardial Diseases in Children** 557
Sakshi Sachdeva, Saurabh Kumar Gupta

SECTION 8 OTHERS

47. Fetal Cardiology 566
Balu Vaidyanathan, Balaganesh Karmegaraj

48. Neonatal Cardiology 575
Sushil Azad

49. Systemic Hypertension in Children 591
Alpana Ohri, Shakuntala S Prabhu

50. Lifestyle Diseases and Related Conditions: Childhood Obesity, Dyslipidemias, and Cardiovascular Risk Reduction during Childhood and Adolescence 601
Manu Raj

51. Stroke in the Young 618
Shilpa Kulkarni, Bharat Dalvi, Sonam Kothari

52. Rhythm Disorders in Children 623
Mani Ram Krishna

SECTION 9 MISCELLANEOUS

53. Common Problems in Office Practice 645
Snehal Kulkarni, Tanuja Karande, Prashant Bobhate

SECTION 10 CARDIOVASCULAR INVOLVEMENT IN OTHER SYSTEM DISORDERS

54. Genetic Disorders Associated with Congenital Heart Disease 657
Dhanya Yesodharan, Sheela Nampoothiri

55. Cardiac Manifestations in Systemic Conditions 666
Sumitra Venkatesh, Swati Garekar, Shakuntala S Prabhu

Index*..... *685