formation on cardiology books, visit our website www.jaypeebrothers.com, for detailed information on cardiology books, visit our website www.jaypeebrothers.com






Decision Making in CARDIOLOGY

An Algorithmic Approach

Achyut Sarkar

JAYPEE

Contents

SECTION 1: ARTIFICIAL INTELLIGENCE

1. Artificial Intelligence: General Approach 3
2. Artificial Intelligence: Application in Cardiology 6

SECTION 2: HYPERTENSION

3. Essential Hypertension: General Approach 13
4. Essential Hypertension: Management 16
5. Secondary Hypertension: General Approach 19
6. Secondary Hypertension: Obstructive Sleep Apnea 21
7. Renal Hypertension: Chronic Kidney Disease 24
8. Renal Hypertension: Renovascular Hypertension 28
9. Secondary Hypertension: Primary Aldosteronism 32
10. Secondary Hypertension: Pheochromocytoma 35
11. Secondary Hypertension: Cushing's Syndrome 39
12. Resistant Hypertension 42

SECTION 3: DYSLIPIDEMIA

13. Dyslipidemia: General Approach 47
14. Dyslipidemia: Management 51

SECTION 4: CORONARY ARTERY DISEASE

15. Atherosclerotic Coronary Artery Disease: Definition 57
16. Non-ST-segment Elevation Myocardial Infarction: Approach 59
17. Non-ST Elevated Myocardial Infarction: Medical Management 62
18. Non-ST Elevated Myocardial Infarction: Invasive Management 66

19. Unstable Angina: Present Status and Management 68
20. Acute ST-elevation Myocardial Infarction: Reperfusion 70
21. ST-elevation Myocardial Infarction: Predischarge and Postdischarge Program 75
22. Coronary Artery Disease: Chronic Coronary Syndrome 79
23. Coronary Artery Disease: Special Situations–Myocardial Infarction with Nonobstructive Coronary Artery 85
24. Coronary Artery Disease: Special Situations–Spontaneous Coronary Artery Dissection 87
25. Special Situations Chronic Kidney Disease and Coronary Artery Disease 89
26. Coronary Artery Bypass Graft Surgery: What the Cardiologist Should Know? 92

SECTION 5: HEART FAILURE

27. Heart Failure: Definition and Types 97
28. Heart Failure: Clinical Assessment 99
29. Management of Heart Failure with Reduced Ejection Fraction 101
30. Heart Failure Variants 104
31. Advanced Heart Failure 109
32. Advanced Heart Failure: Cardiac Device Therapy 112
33. Acute Heart Failure: Approach 116
34. Acute Heart Failure: Management 119
35. Heart Failure: Special Situation 124

SECTION 6: PULMONARY HYPERTENSION

36. Pulmonary Hypertension: Basic Approach 129
37. Pulmonary Hypertension: Management Algorithm 134

SECTION 7: MYOCARDITIS AND CARDIOMYOPATHY

38. Myocarditis 143
39. Peripartum Cardiomyopathy 148
40. Arrhythmogenic Right Ventricular Cardiomyopathy 152

41. Takotsubo Syndrome 158
42. Noncompaction Cardiomyopathy 161

SECTION 8: INFECTIVE AND AUTOIMMUNE DISEASE

43. Rheumatic Fever: Approach 167
44. Acute Rheumatic Fever: Management 169
45. Infective Endocarditis: General Approach 172
46. Infective Endocarditis: Diagnostic Criteria 176
47. Infective Endocarditis: Management 180

SECTION 9: ATRIAL FIBRILLATION

48. Atrial Fibrillation: Basic Approach 185
49. Atrial Fibrillation: Management 189
50. Atrial Fibrillation Management: Special Situations 194

SECTION 10: SYNCOPE

51. Syncope: General Approach 201
52. Syncope: Management 205

SECTION 11: PRIMARY ELECTRICAL ABNORMALITY

53. Primary Electrical Abnormality: Cardiac Channelopathy 213
54. Primary Electrical Abnormality: Congenital Long QT Syndrome 214
55. Primary Electrical Abnormality: Short QT Syndrome 218
56. Primary Electrical Abnormality: Brugada Syndrome 220
57. Primary Electrical Abnormality: Catecholaminergic Polymorphic Ventricular Tachycardia 224
58. Primary Electrical Abnormality: Early Repolarization Syndrome 226

SECTION 12: SUDDEN CARDIAC DEATH

59. Sudden Cardiac Death: General Approach 231
60. Sudden Cardiac Death in General Population 234
61. Sudden Cardiac Death in Dilated Cardiomyopathy 237
62. Sudden Cardiac Death in Ischemic Cardiomyopathy 239
63. Sudden Cardiac Death in Hypertrophic Cardiomyopathy 243

SECTION 13: CARDIO-ONCOLOGY

64. Cardio-Oncology: General Approach 249
65. Cardio-Oncology: Chemotherapy 253
66. Cardio-Oncology: Radiation Therapy 257

SECTION 14: GERIATRIC CARDIOLOGY

67. Degenerative Cardiovascular Disease 263
68. Cardiac Cachexia and Falls in Cardiovascular Disease 270
69. Sarcopenia, Frailty, and Cardiovascular Disease 273

SECTION 15: SPORT CARDIOLOGY

70. Sport Cardiology and Athlete's Heart 279
71. Sudden Cardiac Death in Athlete 281

SECTION 16: ACUTE VASCULAR SYNDROME

72. Acute Pulmonary Embolism: General Approach 287
73. Acute Pulmonary Embolism: Management 290
74. Acute Aortic Syndrome: Approach 293
75. Acute Aortic Syndrome: Imaging and Management 296
76. Acute Limb Ischemia: General Approach 300
77. Acute Limb Ischemia: Imaging and Management 303

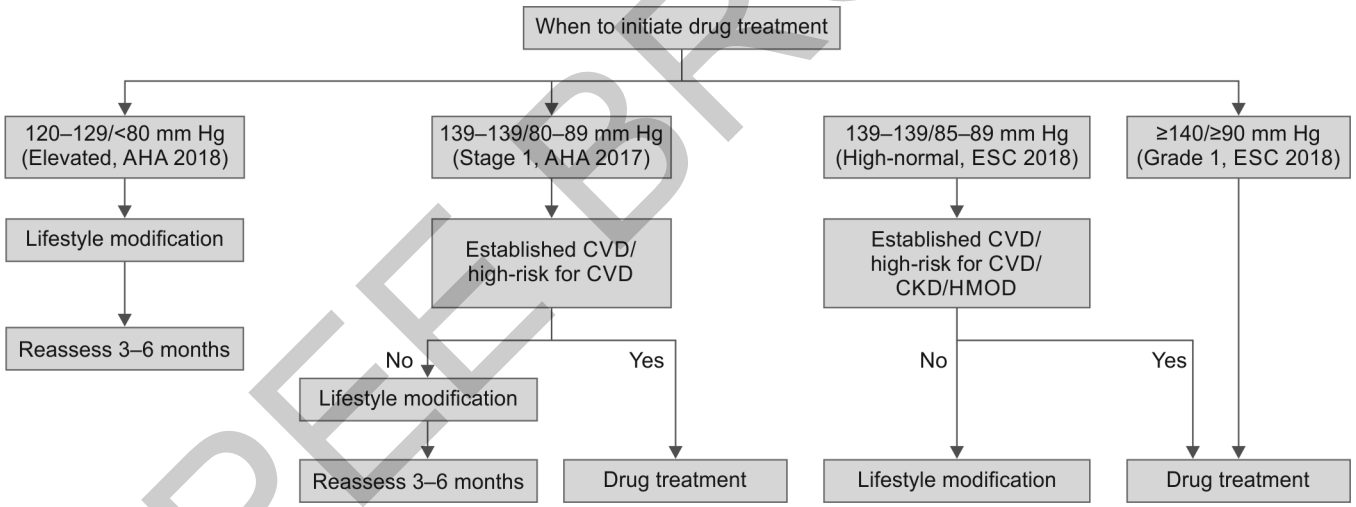
CHAPTER 4

Essential Hypertension: Management

INTRODUCTION

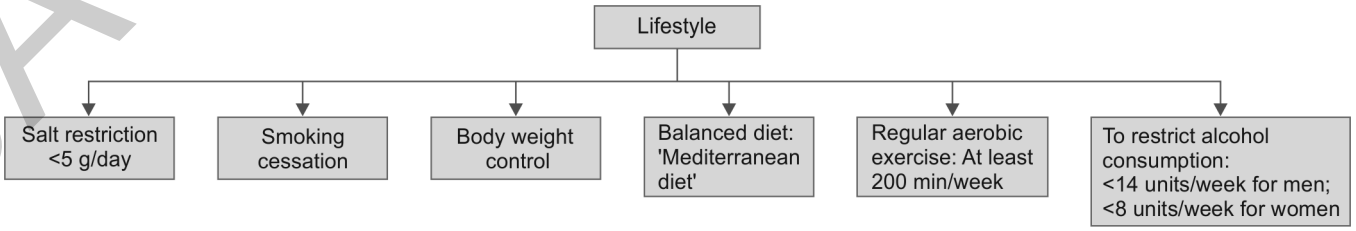
The goal of hypertension management is to achieve a set numerical target of blood pressure and to maintain it. Lifestyle modification is essential part, and when used early, can decrease other disease risk and may avoid the need for drug therapy. The later is however, occurred only a few patients. Majority will eventually need drugs and other intervention.

When to initiate pharmacological treatment in hypertension[1,2]



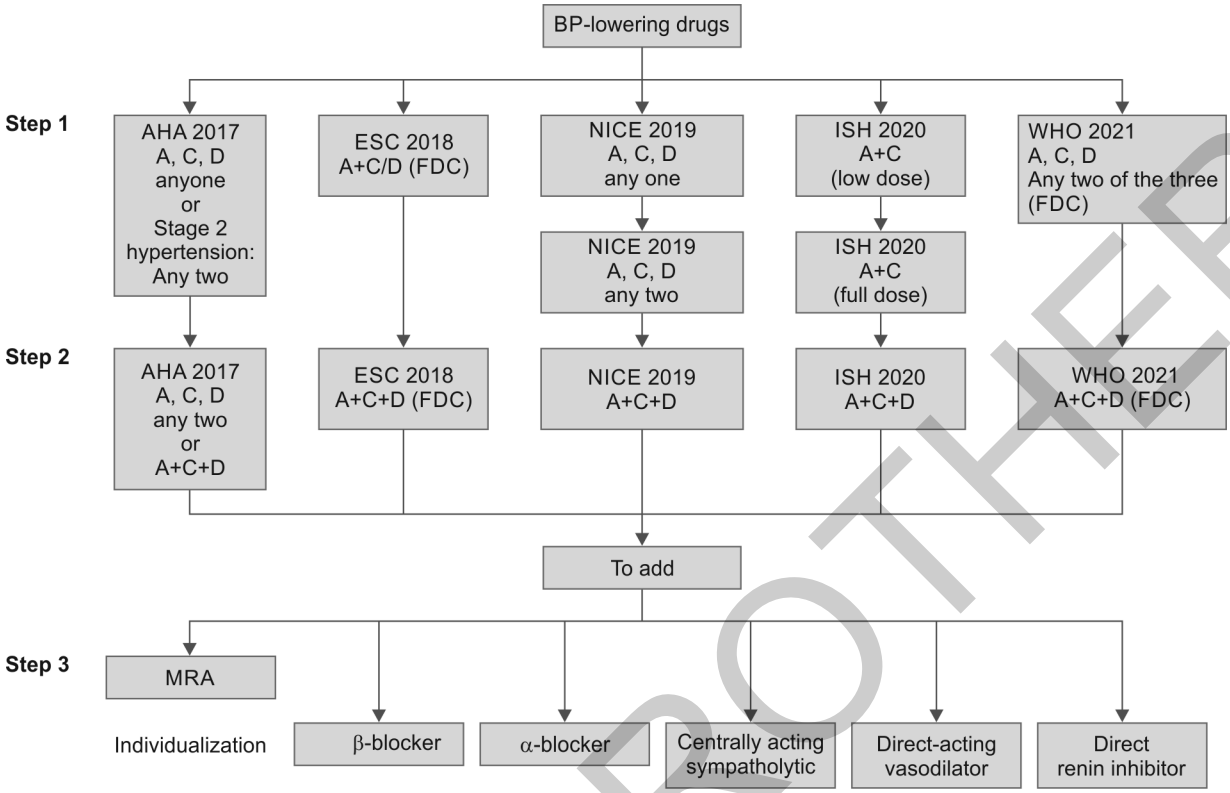
(AHA: American Heart Association; CVD: cardiovascular disease; CKD: chronic kidney disease; ESC: European Society of Cardiology; HMOD: hypertension-mediated organ damage)

How to follow lifestyle in hypertension



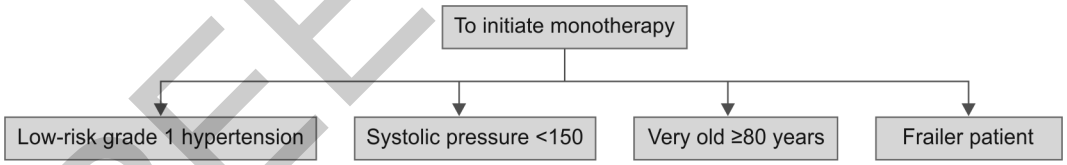
JAYPEE BROTHERS

Pharmacological management for hypertension[1-7]

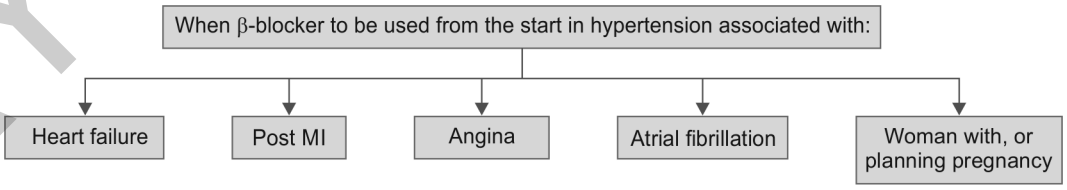


[AHA: American Heart Association; ESC: European Society of Cardiology; ISH: International Society of Hypertension; NICE: National Institute for Health and Care Excellence; A: angiotensin-converting enzyme (ACE) inhibitors/angiotensin receptor blocker (ARB); C: calcium channel blocker; D: thiazide or thiazide-like diuretic; FDC: fixed dose combination; MRA: mineralocorticoid receptor antagonist; WHO: World Health Organization]

Pharmacological management for hypertension: Monotherapy (ESC 2018)



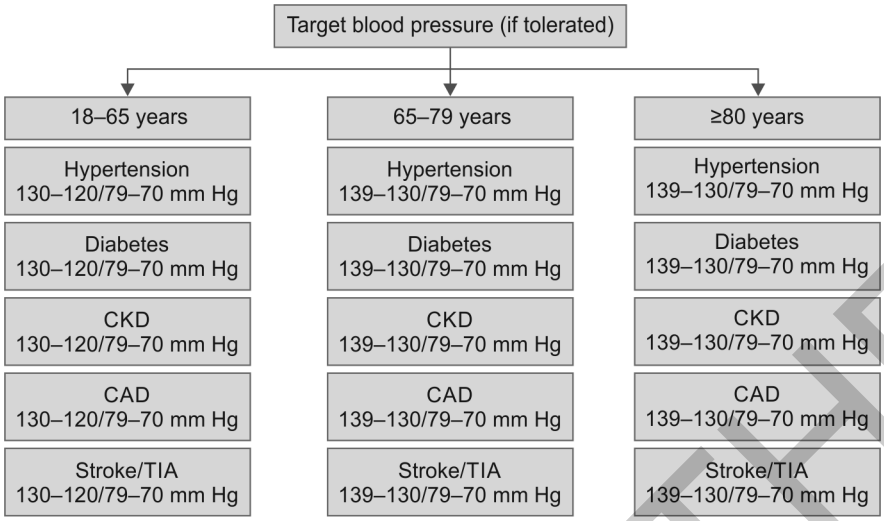
Pharmacological management for hypertension: β-blocker (ESC 2018)



(MI: myocardial infarction)

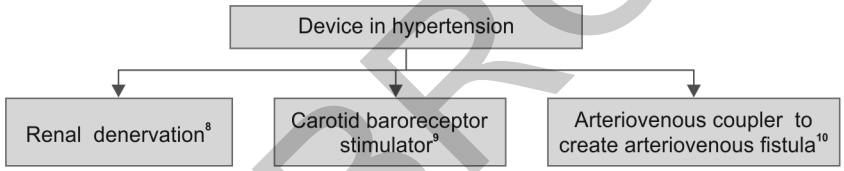
JAYPEE BROTHERS

Target range of blood pressure (ESC 2018)



(CAD: coronary artery disease; CVD: cardiovascular disease; CKD: chronic kidney disease; TIA: transient ischemic attack)

Role of device in hypertension management



REFERENCES

1. Whelton PK, Carey RM, Aronow WS, Casey DE Jr, Collins KJ, Dennison Himmelfarb C, et al. 2017 ACC/AHA/AAPA/ABC/ ACPM/AGS/APhA/ ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: Executive Summary: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. J Am Coll Cardiol. 2018;71:2199-269.
2. Williams B, Mancia G, Spiering W, Agabiti Rosei E, Azizi M, Burnier M, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension. Eur Heart J. 2018;39:3021-104.
3. NICE (2019). Hypertension in adults: diagnosis and management. NICE guideline [NG136]. [online] Available from https://www.nice.org.uk/guidance/ng136 [Last accessed July, 2022].
4. Unger T, Borghi C, Charchar F, Khan NA, Poulter NR, Prabhakaran D, et al. 2020 International Society of Hypertension Global Hypertension Practice Guidelines. Hypertens. 2020;75(6):1334-57.
5. Jeemon P, Amodeo C, Balabanova D, Campbell NRC, Gaita D, Kario K, et al. World Heart Federation Roadmap for Hypertension – A 2021 update. Global Heart. 2021;16(1):63.
6. Lee HY, Shin J, Kim GH, Park S, Ihm SH, Kim HC, et al. 2018 Korean Society of Hypertension Guidelines for the management of hypertension. part II. Diagnosis and treatment of hypertension. Clin Hypertens. 2019;25:20.
7. Stergiou GS, Palatini P, Parati G, O'Brien E, Januszewicz A, Lurbe E, et al. 2021 European Society of Hypertension practice guidelines for office and out-of-office blood pressure measurement. J Hypertens. 2021;39:1293-302.
8. Bhatt DL, Kandzari DE, O'Neill WW, D'Agostino R, Flack JM, Katzen BT, et al; SYMPLICITY HTN-3 Investigators. A controlled trial of renal denervation for resistant hypertension. N Engl J Med. 2014;370:1393-401.
9. Bisognano JD, Kaufman CL, Bach DS, Lovett EG, de Leeuw P; DEBuT-HT and Rheos Feasibility Trial Investigators. Improved cardiac structure and function with chronic treatment using an implantable device in resistant hypertension: results from European and United States trials of the Rheos system. J Am Coll Cardiol. 2011;57(17):1787-88.
10. obo MD, Sobotka PA, Stanton A, Cockcroft JR, Sulke N, Dolan E, et al; ROX CONTROL HTN Investigators. Central arteriovenous anastomosis for the treatment of patients with uncontrolled hypertension (the ROX CONTROL HTN study): a randomised controlled trial. Lancet. 2015;385:1634-41.

JAYPEE BROTHERS

ailed information on cardiology books, visit our website www.jaypeebrothers.com, for detailed information on cardiology books, visit our website www.jaypeeb

Decision Making in CARDIOLOGY
An Algorithmic Approach

This book *Decision Making in Cardiology: An Algorithmic Approach* will appeal to a wide audience of cardiologists, practicing physicians, teachers, and students, who are used to caring patients with cardiac problem.

Key Features

- This is essentially a book on decision-making in cardiology in an algorithm form.
- The book presents a selection over 16 sections. Each section contains a theme. Under the umbrella of the themes, there are 77 chapters.
- Each chapter describes decision-making algorithm on how to diagnose a disease and how to formulate the management.
- There are chapters on common cardiovascular diseases such as hypertension, ischemic heart disease, dyslipidemia, heart failure, atrial fibrillation, infective and inflammatory diseases of heart.
- There are also chapters on unique subjects such as primary electrical abnormality, sudden cardiac death, cardio-oncology, geriatric cardiology, and sport cardiology.
- First section is on artificial intelligence, which is going to rule every field of science and technology in the coming decades.
- All the theories and information provided in the book are based on updated guidelines and studies.
- And everything is expressed in a nice, simple, understandable, crisp language—algorithm.

Achyut Sarkar MD DM (Cardiology) FACC is a Professor of Cardiology and a Senior Interventional Cardiologist. He has been associated with medical education for over three decades. He is the author of *Bedside Cardiology* and *Clinical Cardiology: A Disease Specific Approach* (Jaypee Brothers Medical Publishers Pvt Ltd). He has contributed chapters in *The Protocol Book for Intensive Care, Current Trends in Cardiology, Non-specific Aorto-arteritis, Tropical Heart Disease in India, Echocardiography in Clinical Practice,* and *Clinico-Echo Ensemble*. He has several national and international publications to his credit.

Printed in India

Available at all medical bookstores
or buy online at www.jaypeebrothers.com



JAYPEE BROTHERS
Medical Publishers (P) Ltd.
EMCA House, 23/23-B, Ansari Road,
Daryaganj, New Delhi - 110 002, INDIA
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

Shelving Recommendation
CARDIOLOGY

