

Section 1 Pathophysiology

Introduction

1. Cerebral Vascular Biology in Health and Disease
2. Mechanisms of Thrombosis and Thrombolysis
3. Cerebral Blood Flow and Metabolism: Regulation and Pathophysiology in Cerebrovascular Disease
4. Histopathology of Brain Tissue Response to Stroke and Injury
5. Molecular and Cellular Mechanisms of Ischemia-Induced Neuronal Death
6. Intracellular Signaling: Mediators and Protective Responses
7. The Neurovascular Unit and Responses to Ischemia
8. Mechanisms of Damage After Cerebral Hemorrhage
9. White Matter Pathophysiology
10. Cerebral Ischemia and Inflammation
11. Mechanisms of Plasticity, Remodeling and Recovery
12. Genetics and Vascular Biology of Brain Vascular Malformations
13. Gliovascular Mechanisms and White Matter Injury in Vascular Cognitive Impairment and Dementia

Section 2 Epidemiology and Risk Factors

Introduction

14. Global Burden of Stroke
15. Stroke Disparities
16. Risk Factors and Prevention
17. Prognosis after Stroke
18. Vascular Dementia and Cognitive Impairment
19. Genetic Basis of Stroke Occurrence, Prevention and Outcome

Section 3 Clinical Manifestations

Introduction

20. Classification of Ischemic Stroke
21. Clinical Scales to Assess Patients with Stroke
22. Carotid Artery Disease
23. Anterior Cerebral Artery Disease

24. Middle Cerebral Artery Disease
25. Posterior Cerebral Artery Disease
26. Vertebrobasilar Disease
27. Lacunar Syndromes, Lacunar Infarcts, and Cerebral Small-Vessel Disease
28. Intracerebral Hemorrhage
29. Aneurysmal Subarachnoid Hemorrhage
30. Arteriovenous Malformations and Other Vascular Anomalies
31. Stroke and Other Vascular Syndromes of the Spinal Cord

Section 4 Specific Conditions and Stroke

Introduction

32. Cardiac Diseases
33. Atherosclerotic Disease of the Proximal Aorta
34. Stroke Related to Surgery and Other Procedures
35. Arterial Dissection, Fibromuscular Dysplasia, and Carotid Web
36. Inflammatory and Infectious Vasculopathies
37. Reversible Cerebral Vasoconstriction Syndromes
38. Posterior Reversible Encephalopathy Syndrome
39. Stroke and Substance Abuse
40. Moyamoya Disease
41. Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy
42. Hematologic Disorders and Stroke
43. Migraine and Stroke
44. Cryptogenic Stroke
45. Cerebral Venous Thrombosis

Section 5 Diagnostic Studies

Introduction

46. Ultrasonography
47. Computed Tomography-Based Evaluation of Cerebrovascular Disease
48. Magnetic Resonance Imaging of Cerebrovascular Diseases

49. Cerebral Angiography

50. OMICs in Stroke: Insight into stroke through epigenomics, transcriptomics, proteomics, lipidomics, and metabolomics

Section 6 Therapy

Part A: Medical Therapy

Introduction

51. Stroke Systems of Care and Impact on Acute Stroke Treatment

52. Prehospital and Emergency Department Care of the Patient with Acute Stroke

53. Intravenous Thrombolysis

54. Antithrombotic Therapy for Treatment of Acute Ischemic Stroke

55. General Stroke Management and Stroke Units

56. Critical Care of the Patient with Acute Stroke,

57. Pharmacologic Modification of Acute Cerebral Ischemia

58. Treatment of "Other" Stroke Etiologies

59. Medical Therapy of Intracerebral and Intraventricular Hemorrhage

60. Rehabilitation and Recovery of the Patient with Stroke

61. Interventions to Improve Recovery after Stroke

62. Enhancing Stroke Recovery with Cellular Therapies

63. Antiplatelet Therapy for Secondary Prevention of Stroke

64. Secondary Prevention of Cardioembolic Stroke

65. Design of Stroke-Related Clinical Trials

Part B: Interventional Therapy

Introduction

66. Endovascular Therapy of Extracranial and Intracranial Occlusive Disease

67. Endovascular Treatment of Acute Ischemic Stroke

68. Endovascular Treatment of Intracranial Aneurysms

69. Interventional Therapy of Brain and Spinal Arteriovenous Malformations

70. Dural Arteriovenous Malformations

Part C: Surgical Therapy

Introduction

71. Surgery of Anterior and Posterior Aneurysms

72. Surgery for Intracerebral Hemorrhage

73. Management of Intraventricular Hemorrhage

74. Surgical Management of Cranial and Spinal Arteriovenous Malformations

75. Surgical Management of Cavernous Malformations and Venous Anomalies

76. Indications for Carotid Endarterectomy in Patients with Asymptomatic and Symptomatic Carotid Stenosis

77. Extracranial to Intracranial Bypass for Cerebral Ischemia

78. Decompressive Craniectomy for Infarction and Hemorrhage