Index

ABCD2 score, 29–30, 30t risk stratification, 30t Abeta, 137, 139–140 in CSF, 142 drug research and development, 155-156 Acetaminophen, 89, 102, 126, 205, 206 Acetazolamide, 191 Acetylcholine, 5 Acetylcoenzyme A, 21 Acute arterial occlusion, 41 Acute lung impairment, SAH and, 125 Acute stroke of other determined etiology (ASODE) as cause of ischemic stroke, 40 Adenosine, and cerebral blood flow, 22 Adenosine triphosphate (ATP), 21 Adventitia, 15, 16f AEDs. See Automated external defibrillators (AEDs) AHA. See American Heart Association (AHA) Alcohol consumption, and ICH, 80 Alzhiemer Disease (AD), 136 and Abeta, 137 and CAA, 144-145

American Heart Association (AHA) ICH management, guidelines for, 148-149, 150t American Stroke Association (ASA) ICH management, guidelines for, 148-149, 150t Amphetamine, and ICH, 80 Amyloid β (A β) peptide immunization therapy, 155 Amyloid precursor protein (APP), 137, 139, 155 Analgesics for blood pressure management, 102, 125-126 pain with, treatment of, 126 for migraine, 205-206 Anesthesia in endovascular treatment of AVM, 109 Aneurismal/Aneurysmal SAH, 82 Aneurysms, 101. See also Subarachnoid hemorrhage berry, 103, 104f coil embolization of, 103-105, 104f post-procedural care, 105 fusiform, 103, 104f

Evidence-Based Nursing Care for Stroke and Neurovascular Conditions, First Edition. Edited by Sheila A. Alexander.

 ${inom{\circ}}$ 2013 John Wiley & Sons, Inc. Published 2013 by John Wiley & Sons, Inc.

Aneurysms (Continued) location of, CTA and, 100-101 mycotic, and ICH, 81 post-operative care, 103-105 pre-operative/pre-procedural care, 101–102 rebleeding, monitoring for, 114 and subarachnoid hemorrhage, 100 surgical management, 102-103 Angiography, conventional, 216 Anterior cerebral arteries, 17 Anterior communicating artery, 18 Anterior pituitary gland, 11 Anticardiolipin antibody (aCL), 239 Anticoagulation, for stroke prevention, 44-45 Antidepressants, 231 Antigen-specific response, maladaptive, 263 Antihypertensives, and stroke, 63 Antiplatelet therapy, for stroke prevention, 45-46 Antiphospholipid syndrome (APS) antibodies, 234 complications, 237t consensus criteria, 236t defined, 235 historical perspective, 234 laboratory studies interpretation, 240t laboratory testing, 239-240 pathogenesis, 237-238 prevalence, 238-239 systemic complications, 237 treatment recommendations by clinical manifestation, 242, 250t types, 235 Aortic aneurysm, risk factors, 272

Apolipoprotein E (ApoE), 76, 137 APP. See Amyloid precursor protein (APP) Aricept, 231 Arterial blood pressure and cerebral blood flow, 23 Arterial dissection and neck trauma, 42 Arteries. See Blood vessels Arteriosclerosis, 226 Arteriovenous malformation (AVM), 79, 79f, 174-178. See also Subarachnoid hemorrhage. blood flow patterns, MRI and, 98 defined, 174 diagnosis of, 175-176 embolization of, 177-178 endovascular treatment of, 109-110 post-procedural care, 110 epidemiology, 174-175 and intraparenchymal hemorrhage, 106 location of, CTA and, 100-101 management of, 175 monitoring of, 175-176 pathophysiology, 175 radiotherapy for, 110, 178 resection postoperative care, 108 preoperative/pre-procedural care, 107 surgical procedure, 107-108 rupture, risk of, aging and, 96 securement, 105-106 and subarachnoid hemorrhage, 100 surgical treatments, 177 Artery-to-artery embolism, 42 Asherson's syndrome, 245

Index

ASA. See American Stroke Association (ASA) ASODE. See Acute stroke of other determined etiology (ASODE) Asphyxia, 37 Aspirin and hazard risk for lobar ICH reoccurrence, 154 for migraine, 205, 206 for primary stroke prevention, 45-46 for secondary stroke prevention, 46 - 47ticlopidine, 218 Astrocytic feet, 5, 6f Atherosclerosis, and cerebral aneurysms, 167 ATP. See Adenosine triphosphate (ATP) ATPIA2 gene, 197 Atrial fibrillation and embolic stroke, 43-44 Automated external defibrillators (AEDs), 37 Axon, neuron, 2, 3f myelination of, 7 Basal ganglia, 12 Basilar artery, 18 Bedsores in SAH patients, 128-129 Berry aneurysms, 103, 104f Binswanger's disease demyelination of axons

diagnosis, 228-229

prevention, 229-230

Biomarkers, CAA, 142 Bipolar neuron, 3f

pathophysiology, 226-227

Biofeedback, and migraine, 205

symptom management, 230-231

Blacks subarachnoid hemorrhage in, 96 Bleeding into brainstem region, 179 subarachnoid hemorrhage and, Blood brain barrier, 15 Blood pressure (BP) analgesics and, 102 management, 63 and analgesia, 125-126 and blood vessels patency, 59 and fluid volume, 127 and interventional therapy, 59 IV thrombolytics and, 53, 54t, 58-59 in SAH patients, 125-126 vasoactive medications, 126-127 systolic, 126 Blood vessels, 15, 16f, 17f assessment, 31 brain anterior cerebral arteries, 17 anterior communicating artery, 18 basilar artery, 18 internal carotid arteries, 15-16 middle cerebral arteries, 16-17 posterior cerebral arteries, 18 posterior communicating arteries, 18-19 vertebral arteries, 18 patency, and BP management, 59 Bosentan, 116 Boston criteria for diagnosis of CAA, 140, 141t Bradycardia as physiologic effect of strangulation, 38

Brain, 7-14. See also Central nervous system (CNS) blood vessels anterior cerebral arteries, 17 anterior communicating artery, 18 basilar artery, 18 internal carotid arteries, 15-16 middle cerebral arteries, 16-17 posterior cerebral arteries, 18 posterior communicating arteries, 18-19 vertebral arteries, 18 brainstem, 13-14, 14f cerebellum, 12, 13f development, astrocytes and, 5 diencephalon structures, 11-12, 12f lobes, 7, 10f frontal, 9-10 occipital, 10f, 11 parietal, 10, 10f temporal, 10f, 11 oxygen delivery to, 21 structure, 7-14 temperature, 23 Brainstem, 13-14, 14f Brain tumor, 80, 80f Burrholes, multiple, 221 Buspirone, for migraine treatment, 208-209 CAA inflammation (CAAI), 145-147, 145t diagnosis, 146 treatment, 146-147 CACNA1A gene, 197 CADASIL. See Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and

Leukoencephalopathy (CADASIL) Caffeine, and migraine, 206-207 Calcium channel blockers for treatment of cerebral vasospasm and DCI, 115 cAMP. See Cyclic-adenosine monophosphate (cAMP) Carbon dioxide and cerebral blood flow, 21-22 Carbon monoxide, and stroke, 39 Cardiac action potential phases of, 3 Cardiac arrest and stroke, 36-37 treatment of, 37 Cardioembolism (CE), 28 as cause of ischemic stroke, 40, 42-43 Cardiolipin, 241 Cardiovascular system, Thrombosis, 243 Carotid stenosis and stroke, 47 Carotid Ultrasound (CUS), 31 Catastrophic, 245 Catecholamine, subarachnoid hemorrhage and, 97 Catheters intraparenchymal, 112, 114 intraventricular, 112 Cavernous angiomas, 79-80 CCM. See Cerebral cavernous malformation (CCM) CD4 positive cell type, 262 Cell body, neuron, 2, 3f Cells central nervous system, 2-7 astrocytes, 5, 6f microglia, 7, 8f epithelial, 15, 16f schwann, 7

| | Index |
|--|---|
| Central nervous system (CNS), | types of, 137, 138 <i>t</i> |
| 2–7. See also Brain | warfarin use in patients, 154 |
| cells of, 2–7 | Cerebral aneurysms |
| , | in Circle of Willis, 165, 166f |
| astrocytes, 5, 6f | coil embolization of, 172–173 |
| microglia, 7, 8f neurons, 2–5, 3f, 5f | defined, 163 |
| definition and classification, | epidemiology, 163–164, 163f |
| 260 | 1 055 |
| | identification of, MRI and, 97–98 location of, 171 |
| diagnostic approach, 264 | , |
| epidemiology and pathogenesis, | monitoring of, 168–171 |
| 260–262 | pathophysiology, 165, 167 |
| historical perspective, 260 | post-operative care, 174 |
| pathophysiology, 262 | rupture, prevention of, 168 |
| prognosis, 273 | size of, 165, 169–171 |
| Central venous pressure (CVP) | and subarachnoid hemorrhage, |
| monitoring, with crystalloid | 96–97 |
| fluid, 118, 127 | surgical procedure for, 173–174 |
| triple H therapy and, 117 | Cerebral aquaduct, 13 |
| Cerebellum, 12, 13 <i>f</i> | Cerebral autoregulation, 20 |
| Cerebral amyloid angiopathy | Cerebral aneurysms, 216 |
| (CAA), 78, 135–156 | Cerebral Autosomal Dominant |
| and Alzhiemer disease, 144–145 | Arteriopathy with |
| clinical manifestations of, 141t | Subcortical Infarcts and |
| cortical ischemia and | Leukoencephalopathy |
| microinfarcts, 143 | (CADASIL), 185–191 |
| defined, 136 | diagnosis of |
| diagnosis of, 140–147 | genetic counseling for, 189 |
| biomarkers, 142 | genetic testing for, 188 |
| Boston criteria, 140, 141 <i>t</i> | MRI for, 189 |
| laboratory tests, 143 | psychological counseling for, |
| neuroimaging, 140, 142 | 190 |
| epidemiology, 136–137 | skin biopsy testing for, 188 |
| historical overview, 136 | overview, 186 |
| and ICH, 75 | pathophysiology, 186–187 |
| and intracerebral hemorrhage, | and stroke, 190 |
| 147–153, 150–152 <i>t</i> | symptoms, 187–188 |
| issues in, 154 | management of, 190–191 |
| and leukoencephalopathy, 144 | Cerebral blood flow, 15, 219 |
| microbleeds, 144 | acidotic blood and, 22–23 |
| older adults, prevalence in, 137 | adenosine and, 22 |
| pathophysiology, 137, 139–140 | carbon dioxide and, 21–22 |
| risk factors for, 147 | factors influencing, 19–23 |
| | |

Index

Cerebral blood flow (Continued) glucose and, 20-21 nitric oxide and, 22 oxygen and, 21 pressures and, 23 Cerebral cavernous malformation (CCM), 179-182 defined, 179 diagnosis of, 180-181 epidemiology, 179 medications for, 181 pathophysiology, 179-180 propranolol and, 182 statins and, 182 stereotactic radiosurgery for, 182-183 surgical intervention for, 181-182 Cerebral contusion, 38 Cerebral cortex, 7-8 diencephalon, 11-12, 12f Cerebral edema, 124 subarachnoid hemorrhage and, 97 Cerebral microbleeds (CMB), 142, 144 Cerebral perfusion, 57-58 pressure, 23 Cerebral vasospasm neurologic monitoring, 114-124 subarachnoid hemorrhage and, 96-97 symptoms of, 114-115 treatment of, 115-124 calcium channel blockers for, 115 endothelin receptor antagonist for, 116 intra-arterial agents for, 118–124, 119–122t

magnesium for, 116-117 triple H therapy for, 117-118 Cerebrospinal fluid (CSF) Abeta in, 142 head injuries and, 39 Cerebrovascular disease (CVD), 144, 145 CHADS2 scores, 44 Choking, and stroke, 38 Cigarette smoking and cerebral aneurysms, 168 and ICH, 74 and stroke, 49 and subarachnoid hemorrhage, 98 Circle of Willis, 17f, 19 cerebral aneurysms in, 165, 166f Clazosentan, 116 Clopidogrel, 46, 248t CMB. See Cerebral microbleeds (CMB) Coagulopathy, warfarin and, 78 Cocaine, and ICH, 80 Cognitive behavioral therapy for migraine treatment, 202, 205 Cognitive impairment, and CADASIL, 187 management of, 191 Coil embolization of aneurysm, 103-105, 104f, 172-173 post-procedural care, 105 Collateral blood vessels, 214 Complete blood cell count (CBC), 247 Computed tomographic angiography (CTA), 31 for cerebral aneurysms monitoring, 169 subarachnoid hemorrhage, 100 - 101

| | Index |
|-----------------------------------|---|
| | |
| Computed tomography (CT), 77. | Dabigatran, 45 |
| See also Neuroimaging. | DCI. See Delayed cerebral |
| for arteriovenous malformation | ischemia (DCI) |
| monitoring, 175–176 | Deep intravenous sedation |
| for cerebral aneurysms | in endovascular treatment of |
| monitoring, 168–169 | AVM, 109 |
| findings, post-cardiac arrest, 37 | Deep vein thrombosis (DVT), 62 |
| and hypertensive ICH locations, | ICH and, 88 |
| 77 | Delayed cerebral ischemia (DCI), |
| and ICH diagnosis, 82 | 97 |
| in subarachnoid hemorrhage, | neurologic monitoring, 114-124 |
| 99–100, 100f | symptoms of, 114–115 |
| transient ischemic attacks, | treatment of, 115-124 |
| 30–31 | calcium channel blockers for, |
| Computed tomography perfusion | 115 |
| (CTP), 55 | endothelin receptor |
| Constraint induced therapy, 65 | antagonist for, 116 |
| Coronary artery disease (CAD), | magnesium for, 116–117 |
| 243 | triple H therapy for, 117–118 |
| Corpus callosum, 7 | Dendrites, neuron, 2, 3f |
| Cortical spreading depression | Dendritic cells, 263 |
| (CSD), 197 | Depolarization phase, cardiac |
| Corticosteroid tapering, 270 | action potential, 3 |
| Cranial nerves, 13, 14 | Depression and anxiety, 231 |
| Cranium, 38 | Diabetes, and stroke, 49 |
| CREST trial, 47 | Diazepam, for migraine treatment |
| CUS. See Carotid Ultrasound | 209 |
| (CUS) | Diet |
| CVD. See Cerebrovascular disease | guidelines, for stroke |
| (CVD) | prevention, 49 |
| Cyclic-adenosine monophosphate | Diffuse axonal injury, 38–39 |
| (cAMP) | Diffusion Weighted Imaging |
| production of, adenosine and, | (DWI) |
| | |
| Cyclic veriations 261 | MRI with, 31 Digital subtraction angiagraphy |
| Cyclic variations, 261 | Digital subtraction angiography |
| Cyclophosphamide (Rituximab), | (DSA) |
| 248t | for cerebral aneurysms |
| Cytokines | monitoring, 168 |
| microglia and, 7 | Dihydroergotamine, 207 |
| subarachnoid hemorrhage and, | Dipyridimole, 46 |
| 97 | Donepezil, 191 |

Fadusil, and CCM, 182

,

Index

Do Not Resuscitate (DNR) orders, 76, 149 Down syndrome, 136 Drowning, and stroke, 37 DSA. See Digital subtraction angiography (DSA) DVT. See Deep vein thrombosis (DVT) Dysphagia, 61 Embolic TIA/stroke, 28, 42–43 prevention, 43-45 Embolization of arteriovenous malformation, 177-178 Emergency departments (ED), 85 nurses, 50, 52 and treatment of acute ischemic stroke, 50 Emergency medical service (EMS), 85 Encephaloduroarteriosynangiosis (EDAS), 220 Encephalomyosynangiosis, 220 Endothelial progenitor cells, 215 Endothelin receptor antagonist for treatment of cerebral vasospasm and DCI, 116 Epithelial cells, 15, 16f and NOS production, 22 Ergot alkaloids, and migraine, 207-208 Ergotamine, 207 Erythrocyte sedimentation rate (ESR), 268 Exercise, and migraine, 202 Extended cardiac monitoring, 31 atrial fibrillation, 44 Factor VIIa (FVII), 87

Falx cerebrii, 7 Fasting lipid profile, 32 Fasudil Hydrochloride, 121t Females subarachnoid hemorrhage in, 96 Fibroblast growth factor, 215 Flashing/bright lights, and migraine, 200 Fresh frozen plasma (FFP), 87 Frontal lobes, 9-10, 10f Fusiform aneurysms, 103, 104f Gastrointestinal (GI) tract evaluation of SAH patients, 127-128 of stroke patients, 61 Genetic counseling for CADASIL diagnosis, 189 Genetic Information Non-discrimination Act (GINA), 188 Genetic testing for CADASIL diagnosis, 188 Giant cell Arteritis (GCA), 263t clinical manifestations, 265t features, 263t onset patterns of clinical and subclinical variants, 267 treatment, 269-270 Ginkgolide B, for migraine treatment, 208 Glasgow Coma Scale (GCS), 86, 148 Glioblastoma multiforme and ICH, 80 Glucocorticoid-sparing strategy, 271 Glucose and cerebral blood flow, 20-21 management, during stroke

treatment, 60

286

Factor V Leiden mutation

and thrombophilia, 43

| | Index |
|---|---|
| GLUT-1, transporter molecule, 20 | Hyperhomocystinemia, 198 |
| GOM. See Granular Osmeophylic Material (GOM) | Hyperlipidemia, 63 and stroke, 48–49 |
| Gradient echo (GRE), 180 | Hyperpolarization phase |
| Granular Osmeophylic Material (GOM), 188 | cardiac action potential, 3 |
| Granulomatous inflammation, 271 | Hypertension CAA and, 154 |
| Gyrus, 8 | categories, 48 |
| Gyrus, o | management of, 63 |
| Haptoglobin, fibrinogen, 262 | as risk factor for ICH, 74 |
| HDL-C. See High-density | and stroke, 48 |
| lipoprotein cholesterol | Hypertensive ICH, 77–78, 78f |
| (HDL-C) | STICH <i>vs.</i> , 77–78 |
| Headache Impact Test (HIT-6), | Hypoglycemia, 60 |
| 199 | and migraine, 200 |
| Head injury, and stroke, 38–39 | Hyponatremia, 123–124 |
| HELLP syndrome, 243 | Hypo-osmolar state, 123 |
| Hematologic diseases | Hypotension |
| ICH and, 79 | and AVM, endovascular |
| Hematoma, 83–84 | treatment of, 109 |
| Hemispheres, brain, 7–8 | as physiologic effect of |
| Hemodynamic | strangulation, 38 |
| stability, stroke and | Hypothalamus, 11 |
| BP management, 58–61 | Hypothermia, 221 |
| neurologic management, | |
| 56–58 | Ibuprofen, 102 |
| respiratory management, 58 | ICH. See Intracerebral hemorrhage |
| Hemorrhagic stroke, 214 | (ICH) |
| Hemosiderin, 140, 142, 180 | Immunoglobulin (IV route), 248t |
| Heparin, 248 <i>t</i> | Increased intracranial pressure |
| HHH. See Triple H therapy (HHH) | (ICP) |
| High-density lipoprotein cholesterol (HDL-C), 49 | head injuries and, 39 monitoring and management of |
| | 111–114 |
| HIT-6. See Headache Impact Test (HIT-6) | symptoms of, 57, 112, 113t |
| Human leukocyte antigen (HLA), | Infarction |
| 261 | and CAA, 143 |
| Hydrocephalus, 118, 123 | Injuries |
| treatment of, 123 | head, and stroke, 38–39 |
| Hydroxychloroquine (plaquenil), | Intensive care unit (ICU), 85 |
| 248 <i>t</i> | Interleukin-6 (IL-6), 262 |
| Hyperglycemia, 60 | Internal carotid arteries, 15–16 |

International Headache Society, 198 Interventional therapy BP management in, 59 for stroke treatment, 54-55 Intra-arterial injectable therapies cerebral vasospasm treatment and DCI, 118-124, 119-122t Intra-arterial therapy, for stroke treatment, 54-55 Intracerebral hemorrhage (ICH), 73-89 anticoagulant therapy-induced, 78 AVM and, 79, 79f CAA and, 75 cavernous angiomas, 79-80 cerebral amyloid angiopathy and, 147-153, 150-152t clinical presentation, 82-84 defined, 74 diagnosis of, 82 drug-use-associated, 80 and DVT, 88 fever after, 88-89 glioblastoma multiforme and, 80 and hematologic diseases, 79 hemorrhagic conversion, 81 hypertensive, 77-78, 78f incidence of, 74 lobar, 78 locations, 77 management of, 85-89, 149, 151t AHA/ASA guidelines for, 148–149, 150t mortality rate, 75-77 mycotic aneurysm and, 81 neoplasm and, 80 nursing care, 152, 152t prognosis, 75-77 rate of recurrence, 84 rehabilitation, 89, 153

risk factors, 74-75 score, 75, 76t signs and symptoms of, 148 traumatic, 81 and venous sinus thrombosis, 80 Intraparenchymal catheters, 112, 114 Intraparenchymal hemorrhage and AVM, 106 Intraventricular catheters, 112 Intraventricular hemorrhage (IVH), 77 Ischemia CAA and, 143 TIA and, 27 Ischemic stroke. See Stroke IVH. See Intraventricular hemorrhage (IVH) IV t-PA therapy, 50-54 blood pressure management in, 53, 54t, 58-59 inclusion/exclusion criteria for, 50, 53t Lactate, 20 Large artery atherosclerosis (LAA), 27-28, 40-41 as cause of ischemic stroke, 40 Large-vessel vasculitis, 272 12-lead electrocardiogram (ECG), 31 Leukoencephalopathy CAA and, 144 Lifestyle and cerebral aneurysm, 98 and stroke, 49-50 Lipid profile fasting, 32 Lipids management of, 63-64 LMWH. See Low molecular weight heparinoids (LMWH)

Index

Magnetic resonance perfusion (MRP), 55 Mean arterial blood pressure, 23 Medications for CCM, 181 for migraine, 202, 205-209 Medulla, 14 Memantine, 231 Merci retrieval device, 55 Methotrexate, 271 Methylenetretrahydrofolate reductase (MTHFR) gene, 197-198 Metoprolol, for migraine treatment, 208 Microangiopathy, 28, 41 Microbleeds. See Cerebral microbleeds (CMB) Midbrain, 13 Middle cerebral arteries, 16-17 Migraine, 195-209 analgesics for, 205–206 and CADASIL, 187 caffeine and, 206-207 diagnosis of, 198-199 criteria for, 198 environmental treatment of, 205 ergot alkaloids and, 207-208 frequency, assessment of, 198–199 genes associated with, 197 management of, 190–191 medications for, 202, 205-209 overview, 196 pathophysiology, 196-198 prevention of, 199–209, 201t, 203–204*t* anti-epileptic medication for, 202 cognitive behavioral therapy for, 202, 205

Migraine (Continued) serotonin receptor antagonists for, 200, 201t tricyclic antidepressants for, 202, 203–204*t* triggers, identification and avoidance, 199-200 steroids and, 208 Migraine Disability Assessment (MIDAS), 199 **Migraine** Prevention Questionnaire 5 (MPQ-5), 198-199 Milrinone (Primacore), 122t Mood disorders, and CADASIL, 187 Mortality rate cerebral aneurysm, 164-165 ICH, 75–77, 152–153 Motor deficits subarachnoid hemorrhage and, 99 Moyamoya classification based on angiography, 217t Moyamoya disease, 214 diagnosis, 216-217 medical management, 217 moyamoya classification, 217 pathophysiology, 215-216 prognosis, 215 revascularization surgery, 218 surgical treatments, 218-219 Moyamoya vascular anomalies, 214 MTHFR gene. See Methylenetretrahydrofolate reductase (MTHFR) gene Multipolar neuron, 3f Musculoskeletal system evaluation of SAH patients, 129-130 of stroke patients, 62

Mycotic aneurysm, and ICH, 81 Myelin, 7 NADH. See Nicotinamide adenine dinucleotide (NADH) Neoplasm, and ICH, 80 Nervous system central cells of, 2-7 peripheral neurons of, 4-5 thrombosis, 244 Neuroimaging, 140-142. See also Computed tomography (CT); Magnetic resonance imaging (MRI); Positron emission tomography (PET) for diagnosis of CAA, 140, 142 Neurological deficit, ICH and, 82-84 Neurologic examination, SAH, 110-124 aneurysm rebleeding, 114 cerebral vasospasm, 114-124, 119–122t delayed cerebral ischemia, 114-124 intracranial pressure, monitoring and management of, 111-114, 113t Neurons, 2–5 axon of, 2, 3f cell body, 2, 3f within cerebellum, 12 dendrites of, 2, 3f in frontal lobe, 9 neurotransmitters and, 3-4, 4f and NOS production, 22 of peripheral nervous system, 4 - 5structure of, 3f

| Neuroplasticity, 64 |
|-----------------------------------|
| Neuroscience nursing |
| overview of, 2 |
| Neurotransmitters, 3–4, 4f |
| Nicardipine (Cardene), 120t, 122t |
| Nicotinamide adenine |
| dinucleotide (NADH), 20 |
| NIHSS scoring system, 51–52t |
| NIH Stroke Scale (NIHSS), 86 |
| Nimodipine, 115, 121t |
| NINDS trial, 57 |
| Nitric oxide |
| and cerebral blood flow, 22 |
| Nitric oxide synthase (NOS), 22 |
| NMDA glutamate receptor |
| blocker, 231 |
| Nodes of Ranvier, 7 |
| Non-steroidal anti-inflammatory |
| drugs (NSAIDS) |
| for migraine, 205, 206 |
| Normal saline solution (NSS), 59 |
| Notch 3 gene, and CADASIL, |
| 186 |
| Nurses, ED, 50, 52 |
| Obstructive sleep apnea, 228 |
| Occipital lobe, 10f, 11 |
| Olanzapine, 231 |
| Older adults |
| CAA in, 137 |
| Oligodendrocytes, 5, 7 |
| diagram of, 9f |
| Outpatient rehabilitation, 130 |
| Oxaloacetate, 21 |
| Oxygen |
| administration of, 102 |
| and cerebral blood flow, 21 |
| Papavarine, 118, 119t, 122t |

Papavarine, 118, 119t, 122t Papilledema, subarachnoid hemorrhage and, 99 Parietal lobe, 10, 10f

Index

PCC. See Prothrombin complex concentrate (PCC) PE. See Pulmonary emboli (PE) Penumbra device, 55 Peripheral nervous system neurons of, 4-5 Perivascular infiltration, 146 Phospholipids, 206 Physical activity, for stroke prevention, 50 Pituitary glands, 11 Polygenetic disorder, 261 Polymyalgia Rhumatica (PMR), 263t Pons, 13 Pontine arteries, 18 Positron emission tomography (PET), 142. See also Neuroimaging Post-central gyrus, 10 Posterior cerebral arteries, 18 Posterior communicating arteries, 18-19 Posterior pituitary gland, 11 Precentral gyrus, 9 Prednisone, 248t Prefrontal lobe/cortex, 9 Prehypertension, 48 Primary motor cortex/strip, 9 Primary sensory cortex, 10 Prolonged inflammation, 215 Prophylaxis, primary, 249 Propranolol and CCM, 182 and migraine, 208 Prostaglandins, 206 Prothrombin complex concentrate (PCC), 87 Psychological counseling for CADASIL diagnosis, 190 Pulmonary emboli (PE), 62 Pyruvate, 20-21

Radiotherapy for AVM management, 110, 178 Rebleeding, aneurysm monitoring for, 114 Receptors binding of, 5 Rehabilitation ICH, 89, 153 outpatient, 130 stroke, 64-65 Relaxation therapy, and migraine, 205 Repolarization phase, cardiac action potential, 3 Respiratory diseases and choking, 38 Respiratory distress syndrome and SAH, 125 Respiratory rate monitoring in ischemic stroke patients, 58 in SAH, 124–125 Retinal hemorrhage subarachnoid hemorrhage and, 99 Return of spontaneous circulation (ROSC), 36 Risperidone, 231 Robot-assisted therapy, 65 Schwann cells, 7

SCN1A gene, 197 SDH. See Subdural hemorrhage (SDH) Second-hit theory, 238 Secretase inhibitors, 155 Seizures, 174 and CCM, 179 management of, 181 subarachnoid hemorrhage and, 99 Sentinel bleed, 167 Serotonin antagonists for prevention of migraine, 200, 201*t* Single-photon emission computed tomography (SPECT), 217 Skin biopsy testing for CADASIL diagnosis, 188 Small artery occlusion (SAO), 28, 41-42 as cause of ischemic stroke, 40 Sodium-potassium pumps, 3 Soma, neuron, 2, 3f Somatosensory cortex, 10 SPARCL trial, 48 Spontaneous intracerebral hemorrhage. See Hypertensive ICH Spot sign, 82 Stage 1 hypertension, 48 Stage 2 hypertension, 48 Statins, and CCM, 182 Stereotactic radiosurgery, for CCM, 182-183 Steroids, and migraine, 208 STICH. See Supratentorial ICH (STICH) Strangulation, and stroke, 37-38 Stress ulcers, 128 Stroke, 35-67 CADASIL and, 190 carbon monoxide and, 39 cardiac arrest and, 36-37 causes of, 39-40, 39t choking and, 38 defined, 36 drowning and, 37 embolic, 42-43 prevention, 43-45 head injury and, 38-39

_

| | Index |
|--|---------------------------------|
| hemodynamic stability | Subarachnoid hemorrhage (SAH), |
| BP management, 58–61 | 74, 95–131. See also |
| neurologic management, | Aneurysm; Arteriovenous |
| 56–58 | malformation (AVM) |
| respiratory management, 58 | acute care, 101–131 |
| hypercoagulability and, 43 | and blood pressure |
| patients | management, 125–127 |
| acute care for, 56 | and cerebral vasospasm, 96–97 |
| evaluation of, 61–62 | diagnosis of, 99–101 |
| long-term care of, 63–65 | long-term care, 130–131 |
| nursing care for, 55–56 | lumbar puncture for, 100 |
| post-acute-stroke placement and | neurologic examination, |
| care, 65–67 | 110–124 |
| prevalence/incidence, 36 | aneurysm rebleeding, 114 |
| prevention of, 43–47 | cerebral vasospasm, 114–124, |
| rehabilitation approach, 64–65 | 119-122t |
| risk factors | delayed cerebral ischemia, |
| carotid stenosis, 47 | 114–124 |
| cigarette smoking, 49 | intracranial pressure, |
| diabetes, 49 | monitoring and |
| hyperlipidemia, 48–49 | management of, 111–114, |
| hypertension, 48 | 113 <i>t</i> |
| lifestyle, 49–50 | overview, 96 |
| strangulation and, 37–38 | pathophysiology, 96–97 |
| thrombophilia and, 43 | prevention of, 97–98 |
| thrombotic, 40–42 | symptoms, 99 |
| prevention of, 45-47 | Subarachnoid screws/bolts, |
| TOAST criteria, 39–40, 39t | 112 |
| treatment of | Subdural hemorrhage (SDH), |
| glucose management during, | 81 |
| 60 | Subdural screw/bolt, 112 |
| interventional, 54-55 | Sulcus, 8 |
| temperature management | Supratentorial ICH (STICH) |
| during, 60–61 | hypertensive ICH vs., 77–78 |
| thrombolytics and, 50–53, | Surgery |
| 51–52 <i>t</i> , 53 <i>t</i> , 54 <i>t</i> | aneurysm, 102–103, 173–174 |
| Strokes of undetermined etiology | AVM resection, 107-108, 177 |
| (SUE) | of CAA-induced ICH, 149 |
| as cause of ischemic stroke, | CCM, 181–182 |
| 40 | Susceptibility-weighted imaging |
| Subacute bacterial endocarditis | (SWI), 180 |
| (SBE), 81 | Suzuki grading system, 217t |
| | |

Swallowing assessment in SAH patients, 127-128 in stroke patients, 61 Sylvian fissure, 10 Synapse signal transmission at, 4, 4f Syncope as symptom of subarachnoid hemorrhage, 99 Systemic lupus erythematosus (SLE), 235 Systolic blood pressure, 126 T-cell derived cytokines, 262 TEE. See Transesophageal echocardiogram (TEE) Temperature management during stroke treatment, 60-61 Temporal artery biopsy (TAB), 268-269 Temporal lobe, 10f, 11 Tentorium cerebelli, 12 Thalamus, 11 Thrombocytopenia, 87 defined, 245 Thrombolytics for stroke treatment, 50-53, 51-52t, 53t, 54t Thrombocytosis, 268 Thromboembolic events, 251 Thrombophilia causes of, 43 and stroke, 43 Thrombotic stroke, 40-42 prevention of, 45-47 Thromboxane, 206 Thunderclap headache as symptom of subarachnoid hemorrhage, 99 TIA. See Transient ischemic attacks (TIA)

Ticlodipine, 47 Tissue necrosis factor (TNF) inhibitor, 271 TNF alpha inhibitor, 271 TOAST criteria, 39-40, 39t Transcranial Doppler (TCD), 31 Transesophageal echocardiogram (TEE), 32 Transient ischemic attacks (TIA), 25-32 clinical characterization of, 26 defined, 26 diagnosis, 29-32 embolic, 28 epidemiology, 26-27 pathophysiology, 27 physiologic causes of, 27-30 prevention of, 29 Transmural (non)-granulomatous angitis, 146 Transthoracic echocardiogram (TTE), 32 Traumatic ICH, 81 Tricyclic antidepressants for prevention of migraine, 202, 203–204t Triple H therapy (HHH) goals, 117 for treatment of cerebral vasospasm and DCI, 117-118 Triptans, 207-208 Tunica externa, 15, 16f Tunica media, 15, 16f T1 weighted images, 216 Unipolar neuron, 3f

Vascular malformations, 163-183 arteriovenous malformation, 79, 79f, 174-178

_

| | Index |
|--|------------------------------------|
| hlaad flamma MDI and | |
| blood flow patterns, MRI and, 98 | surgical procedure for, 173–174 |
| defined, 174 | cerebral cavernous |
| diagnosis of, 175–176 | malformation, 179–182 |
| embolization of, 177–178 | defined, 179 |
| endovascular treatment of, | diagnosis of, 180–181 |
| 109–110 | epidemiology, 179 |
| epidemiology, 174–175 | medications for, 181 |
| and intraparenchymal | pathophysiology, 179–180 |
| hemorrhage, 106 | stereotactic radiosurgery for, |
| location of, CTA and, 100–101 | 182–183 |
| management of, 175 | surgical intervention for, |
| monitoring of, 175–176 | 181–182 |
| pathophysiology, 175 | Vasoactive drugs, for blood |
| radiotherapy and, 110 | pressure management, |
| resection, 107–108 | 126–127 |
| rupture, risk of, aging and, | Vasodilation, 21, 22 |
| 96 | Venereal Disease Research |
| securement, 105–106 | Laboratory (VDRL), 234 |
| surgical treatments, 177 | Venous sinus thrombosis, ICH |
| cerebral aneurysm | and, 80 |
| in Circle of Willis, 165, 166f | Verapamil, 120t |
| coil embolization of, 172–173 | Vertebral arteries, 18 |
| defined, 163 | Vision |
| epidemiology, 163–164, 163f | subarachnoid hemorrhage and, |
| identification of, MRI and, 97–98 | 99 |
| location of, 171 | Warfarin, 45, 248t |
| monitoring of, 168–171 | and coagulopathy, 78 |
| pathophysiology, 165, 167 | and risk of ICH, 74 |
| post-operative care, 174 | usage in CAA patients, 154 |
| rupture, prevention of, 168 size of, 165, 169–171 | Warfarinization, 87 |
| and subarachnoid | Xenon-enhanced computed |
| hemorrhage, 96–97 | tomography (XeCT), 217 |
| - | |

