PSAP

A Guide to Clinical Decision-Making: The PSAP Algorithms

Online Handbook

Fourth Edition

American College of Clinical Pharmacy

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A Guide to Clinical Decision-Making: The PSAP Algorithms, Fourth Edition
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Introduction

Clinicians continue to find the information in the *Pharmacotherapy Self-Assessment Program* (PSAP) modules not only a superb educational resource, but also a valuable patient care resource, replete with up-to-date information. The algorithms particularly can be used by clinicians as a quick reference to help guide patient care decisions. Although the format of PSAP is almost ideal as a teaching tool, it may not lend itself as readily to user-friendly practice applications. Thus, we have created this reference, a condensation of the pharmacotherapy algorithms from PSAP-VI, to provide a ready reference for a busy clinician.

The goal of this reference is to provide an affordable collection of clinically useful pharmacotherapy decision-making algorithms that are easy to find, understand, and apply. We have attempted to provide algorithms to help guide experienced clinicians in making optimal choices in concert with their patients without the need to consult additional references extensively. Thus, we have included algorithms leading to selection of type of therapy or selection between or among therapeutic options. Diagnostic algorithms have not been included. The material that is included is listed in the same general therapeutic categories as the PSAP modules. Please note that some algorithms may have been modified from their original PSAP version to reflect "current thinking."

We hope you find this collection of algorithms a useful addition to your patient care armamentarium.

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A Guide to Clinical Decision-Making: The PSAP Algorithms, Fourth Edition

Pharmacotherapy Self-Assessment Program, Sixth Edition

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PHARMACOTHERAPY SELF-ASSESSMENT PROGRAM SIXTH EDITION

Editorial Board

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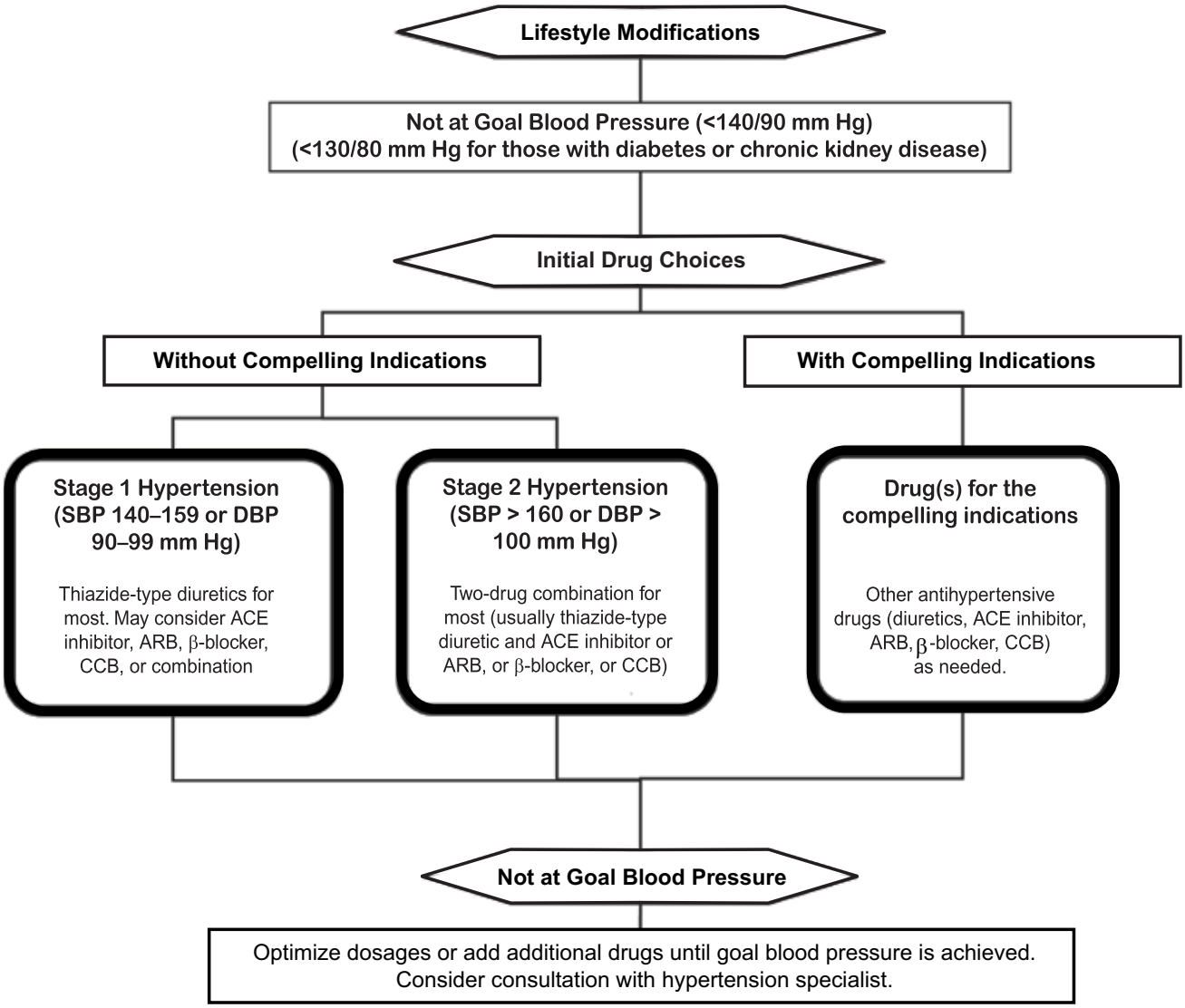
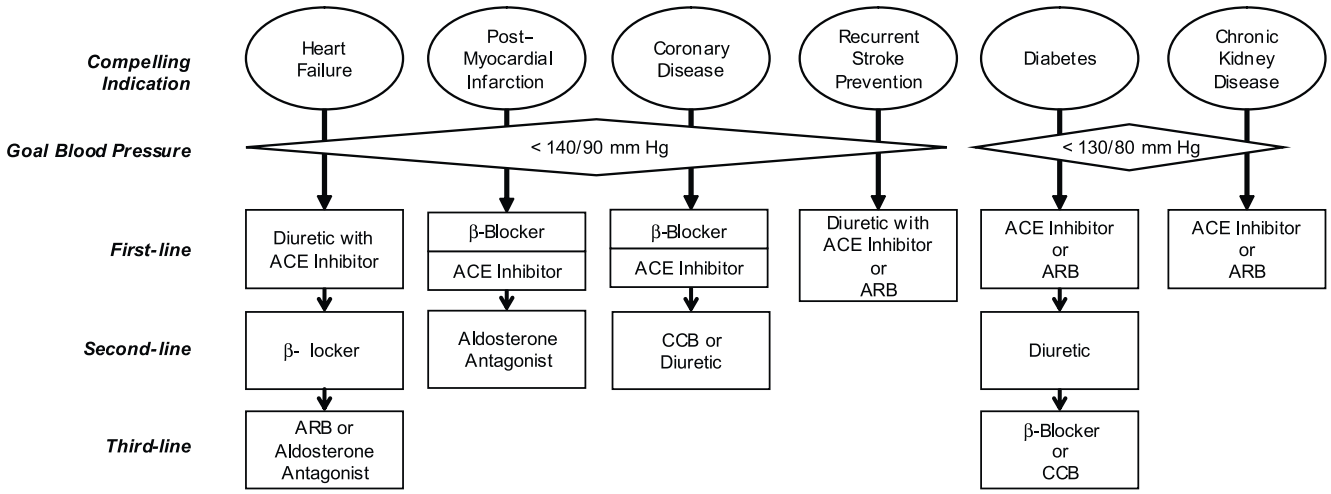
Algorithm for treatment of hypertension from JNC 7



ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; CCB = calcium channel blocker; DBP = diastolic blood pressure; JNC 7 = Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL Jr, et al; Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. National Heart, Lung, and Blood Institute; National High Blood Pressure Education Program Coordinating Committee. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Hypertension 2003;42:1206–52.

Compelling indications for specific pharmacotherapy

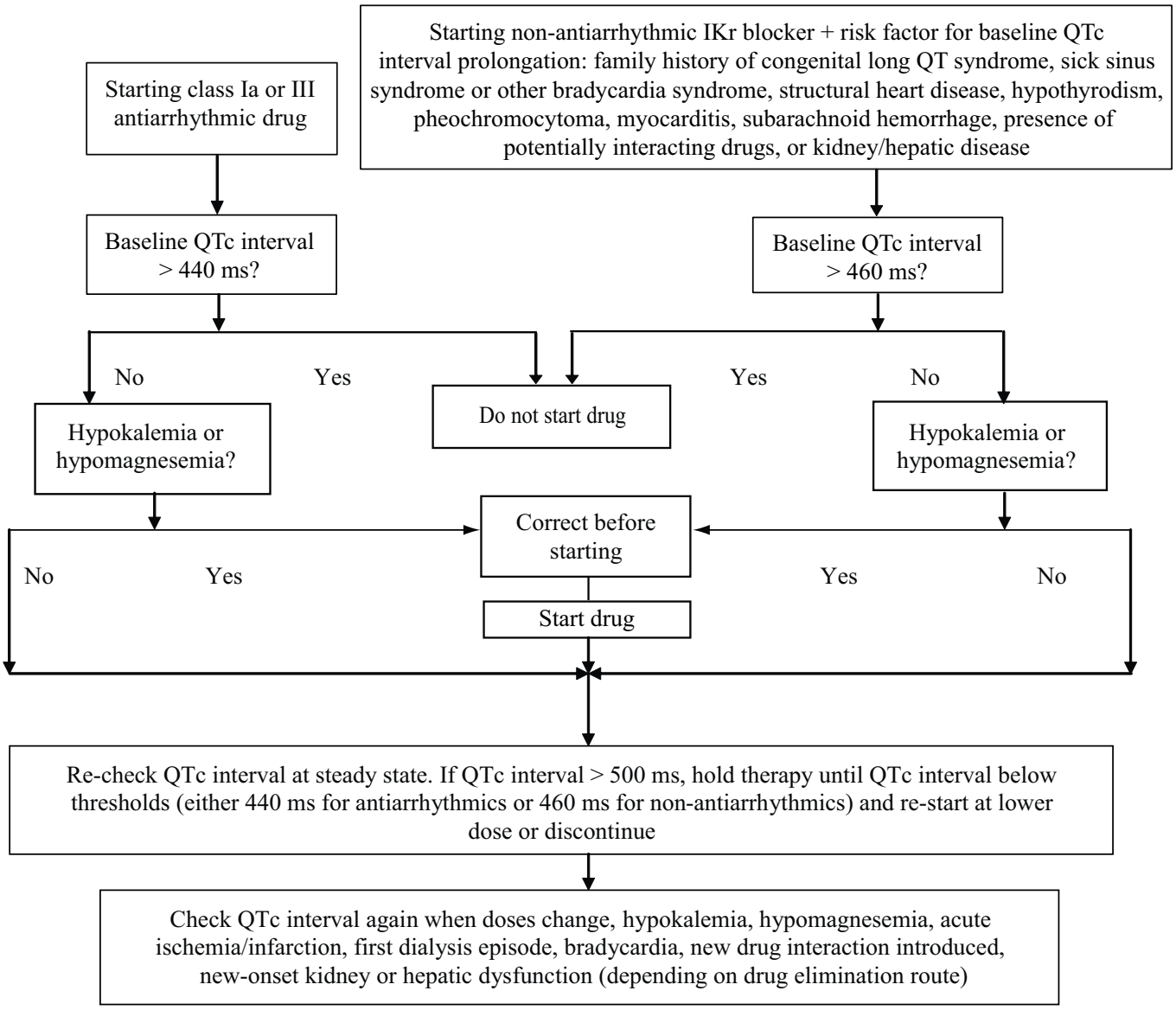


Recommendations are based on evidence demonstrating reduced morbidity and/or mortality related to the compelling indication with recommended pharmacotherapy and adapted from JNC 7 recommendations. Blood pressure should be managed concurrently with the compelling indication using these drugs when possible.

ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; CCB = calcium channel blocker; JNC 7 = Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure.

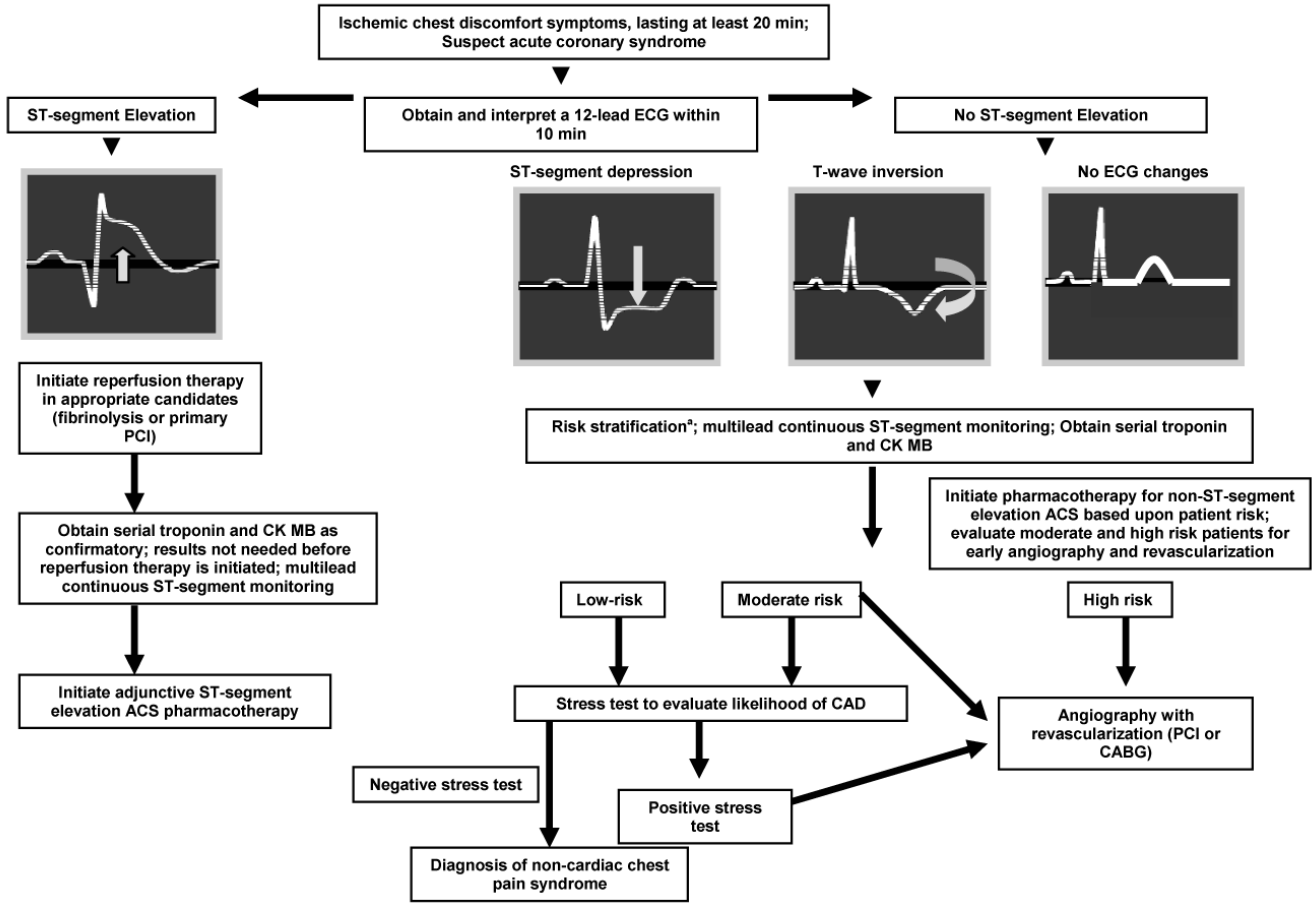
Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL Jr, et al; Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. National Heart, Lung, and Blood Institute; National High Blood Pressure Education Program Coordinating Committee. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. Hypertension 2003;42:1206–52.

QTc interval monitoring algorithm



IKr = rapid component of the delayed rectifier potassium channel; ms = millisecond; QTc interval = corrected QT interval.

Evaluation of the acute coronary syndrome patient



[a]As described in table on p. 5.
ACS = acute coronary syndrome; CABG = coronary artery bypass graft surgery; CAD = coronary artery disease; CK, MB = creatine kinase, myocardial bound; ECG = electrocardiogram; PCI = percutaneous coronary intervention.
Adapted with permission from McGraw-Hill. Spinler SA, de Denus S. Acute coronary syndromes. In: DiPiro JT, Yee GC, Matzke GR, Wells BG, Posey LM, eds. Pharmacotherapy: The Pathophysiologic Approach, 6th ed. New York: McGraw-Hill, 2005:291–320.

Risk stratification for non-ST-segment elevation acute coronary syndrome

Using the TIMI Risk Score

Past Medical History	Clinical Presentation
✓ Age = 65 years	✓ ST-segment depression (≥ = 0.5 mm)
✓ ≥ = 3 Risk Factors for CAD	✓ ≥ = 2 episodes of chest discomfort within the past 24 hours
Hypercholesterolemia	✓ Positive biochemical marker for infarction[b]
HTN	
DM	
Smoking	
Family history of premature CHD[a]	
✓ Known CAD (= 50% stenosis of coronary artery)	
✓ Use of aspirin within the past 7 days	

One point is assigned for each of the seven medical history and clinical presentation findings. The score (point) total is calculated and the patient is assigned a risk for experiencing the composite end point of death, myocardial infarction or urgent need for revascularization as follows:

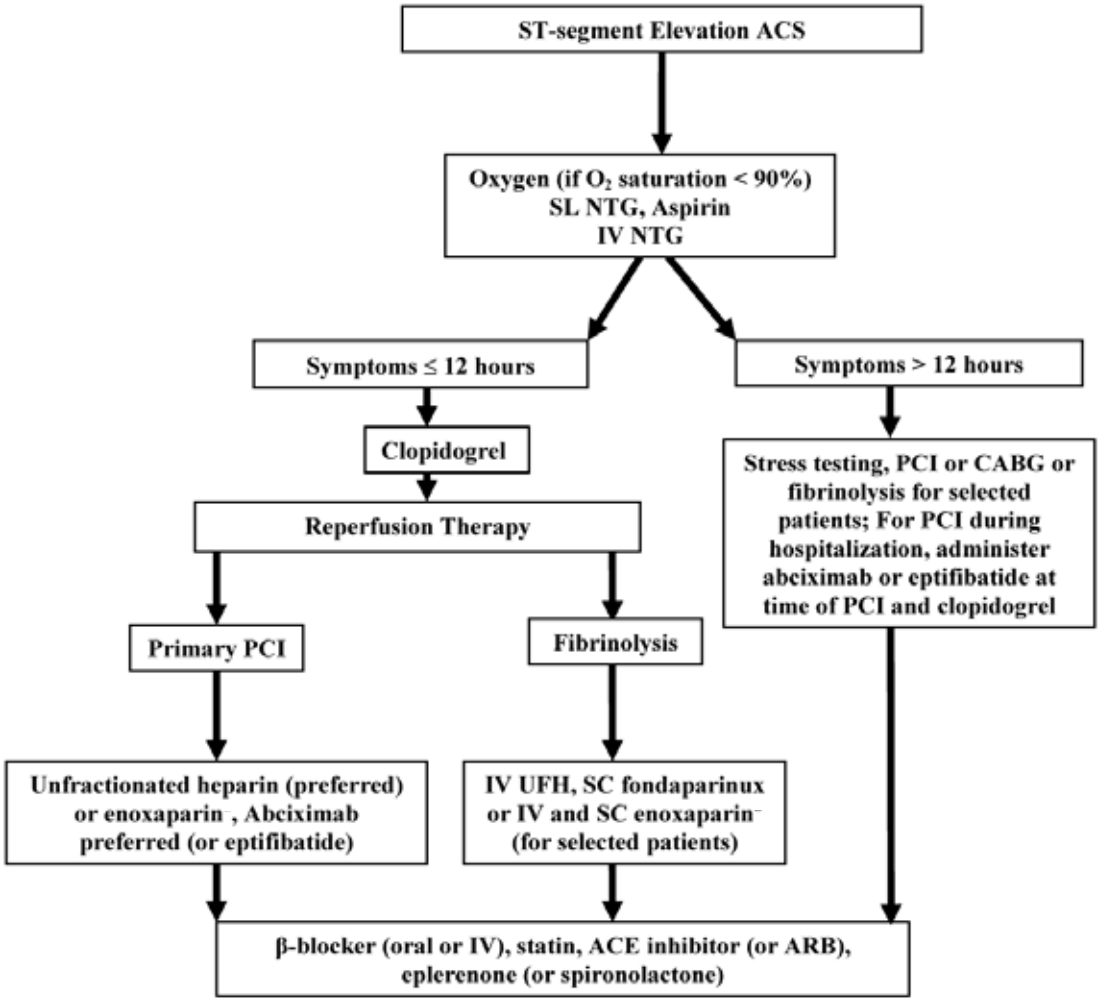
High-Risk	Medium Risk	Low-Risk
TIMI Risk Score 5–7 points	TIMI Risk Score 3–4 points	TIMI Risk Score 0–2 points

Other Ways to Identify High-Risk Patients:

Other findings which alone, or in combination, may identify a patient at high risk of death or MI:
ST-segment depression
Positive biochemical marker for infarction[b]
Deep symmetric T-wave inversions (≥ 2 mm)
Acute heart failure
Diabetes mellitus
Chronic kidney disease
Recent myocardial infarction (within the past 2 weeks)

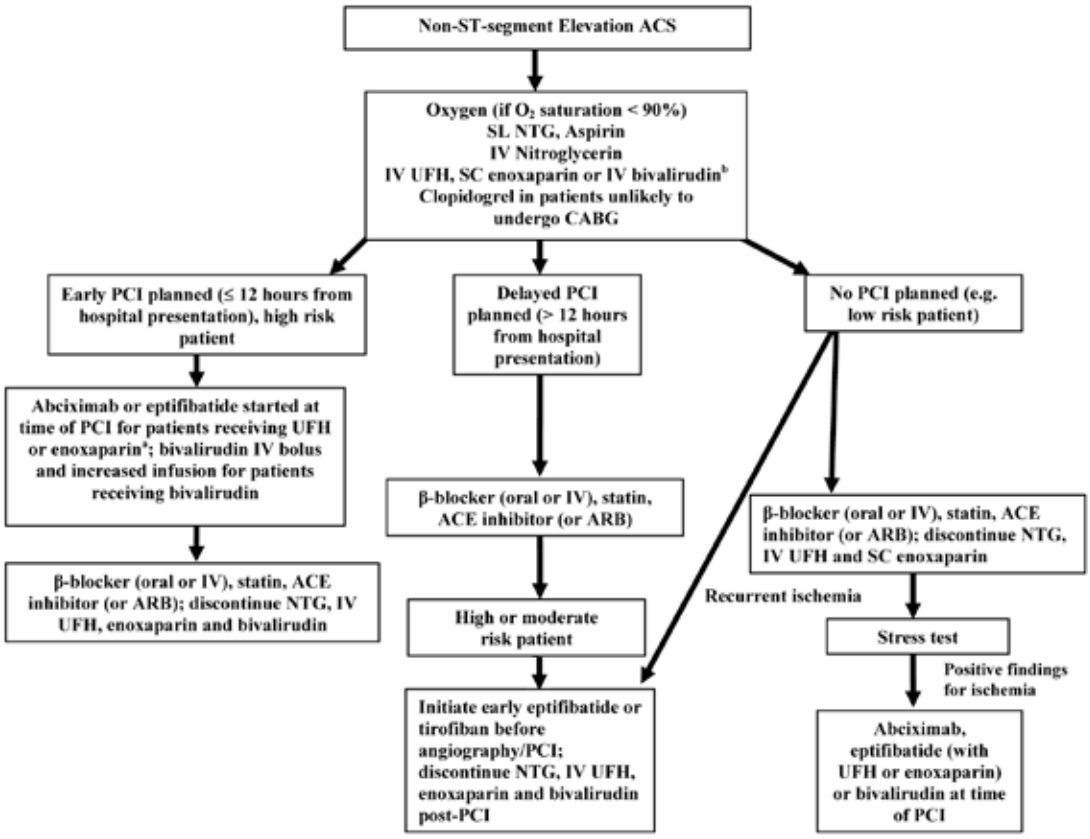
[a]As defined by the National Cholesterol Education Program Adult Treatment Panel III Report (2001): the presence of coronary heart disease in a first degree male relative younger than age 55 or a first-degree female relative younger than age 65.
[b]A positive biochemical marker for infarction is a value of troponin I, troponin T or creatinine kinase MB of greater than the myocardial infarction detection limit.
CAD = coronary artery disease; CHD = coronary heart disease; HTN = hypertension; TIMI = Thrombolysis in Myocardial Infarction.
Adapted with permission from McGraw-Hill. Spinler SA, de Denus S. Acute coronary syndromes. In: DiPiro JT, Yee GC, Matzke GR, Wells BG, Posey LM, eds. Pharmacotherapy: The Pathophysiologic Approach, 6th ed. New York, NY: McGraw-Hill, 2005:291–320.

Initial pharmacotherapy for ST-segment elevation acute coronary syndromes



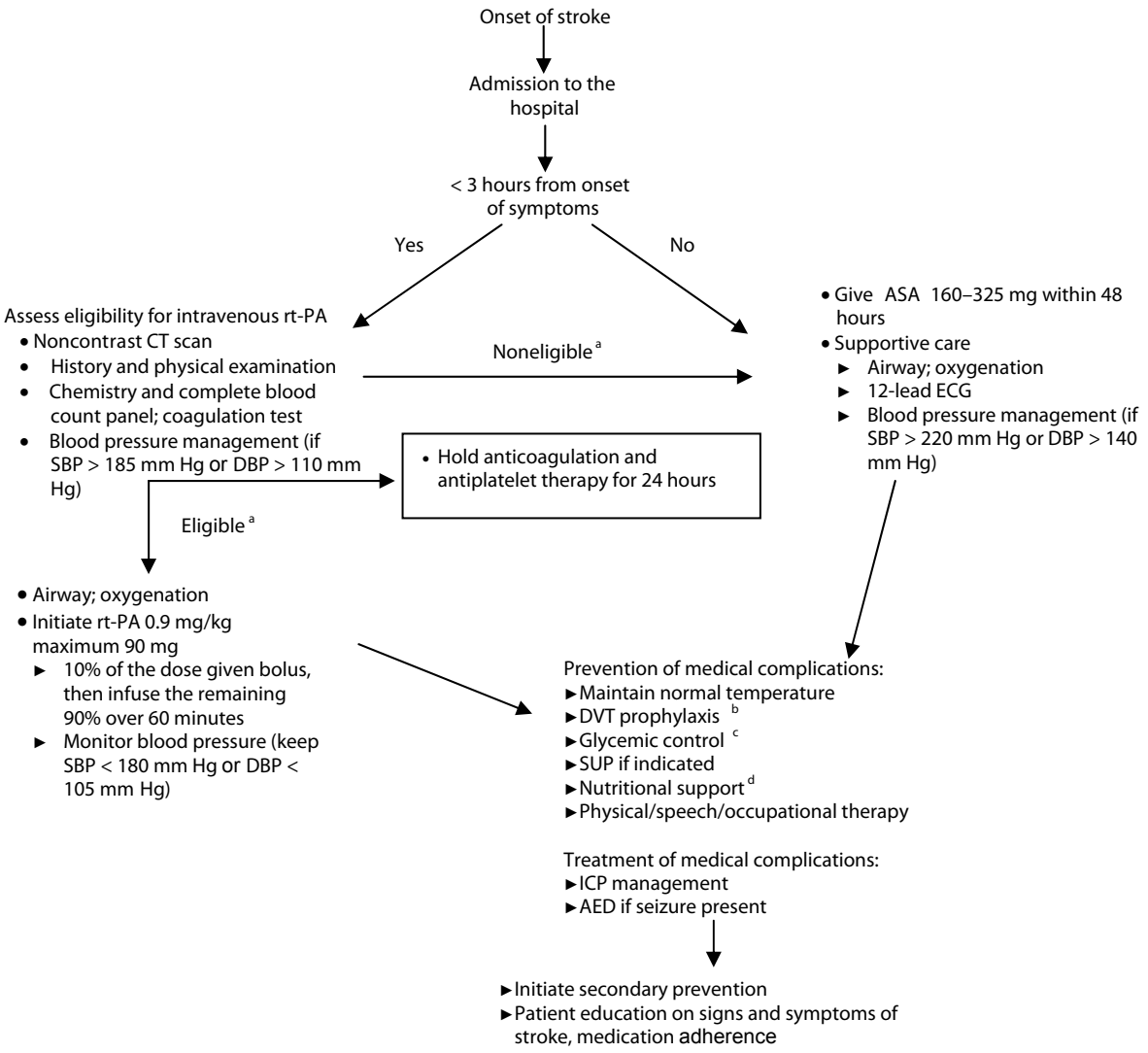
ACE = angiotensin enzyme; ACS = acute coronary syndrome; ARB = angiotensin receptor blocker; CABG = coronary artery bypass graft surgery; IV = intravenous; NTG = nitroglycerin; O_2 = oxygen; PCI = percutaneous coronary intervention; SC = subcutaneously; SL = sublingual; UFH = unfractionated heparin.

Initial pharmacotherapy for non-ST-segment elevation acute coronary syndrome



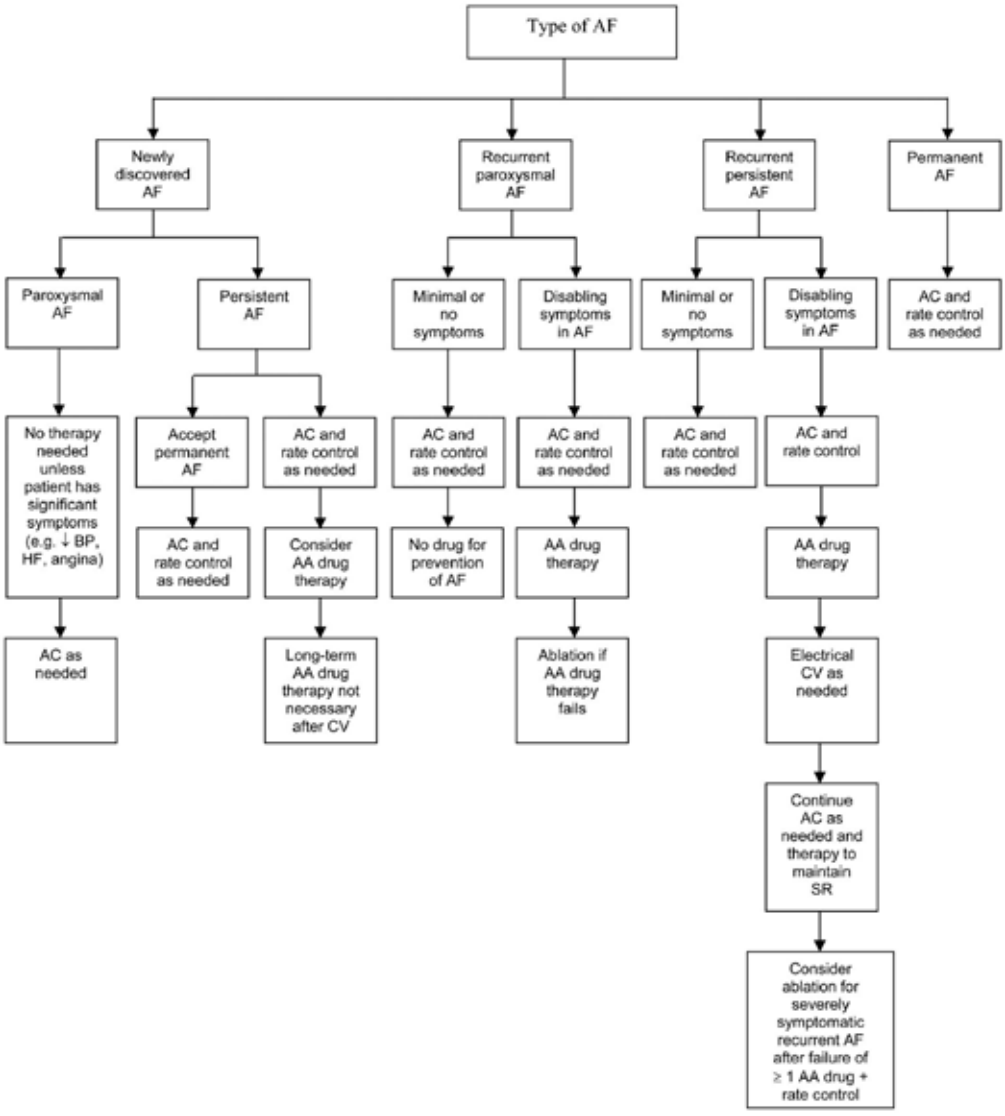
[a]May require supplemental IV dose of enoxaparin.
[b]Fondaparinux may be used as anticoagulant if no PCI planned.
ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; ACS = acute coronary syndrome; CABG = coronary artery bypass graft surgery; IV = intravenous; NTG = nitroglycerin; O_2 = oxygen; PCI = percutaneous coronary intervention; SC = subcutaneous; SL = sublingual; UFH = unfractionated heparin.

Acute ischemic stroke management algorithm



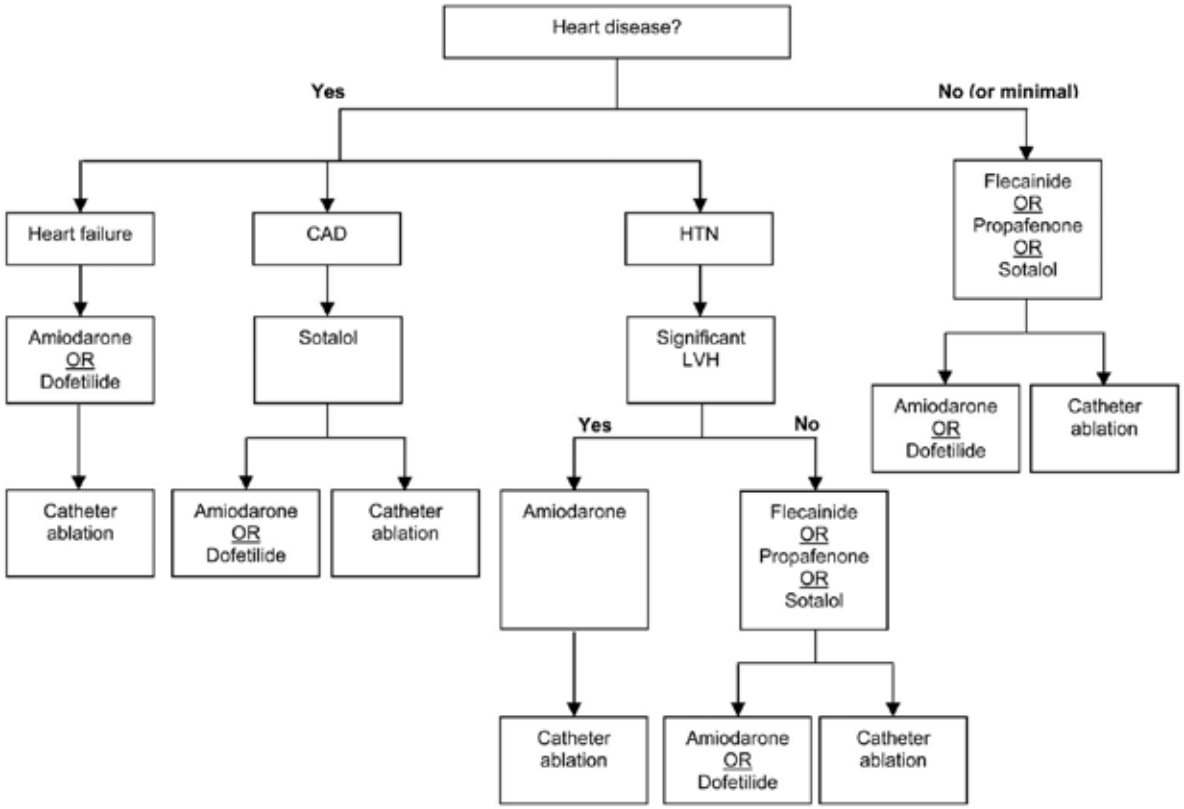
[a]Eligibility for intravenous rt-PA: onset within 3 hours; negative for hemorrhagic stroke or history; blood pressure < 185/110 mm Hg; no head trauma, prior stroke, or myocardial infarction in the past 3 months; no history or gastrointestinal or urinary tract hemorrhage in the past 21 days; no major surgery in the previous 14 days; not taking oral anticoagulant or INR ≤ 1.7; platelet count ≥ 100,000/mm^3; blood glucose ≥ 50 mg/dL; no seizure with postictal residual neurologic impairments at onset of stroke.
[b]All pharmacologic prophylaxis should be held for 24 hours post-thrombolytic therapy.
[c]Hyperglycemic control should be managed judiciously. The consensus is to treat when glucose > 300 mg/dL. The role of tight glucose control is currently unknown in patients with stroke.
[d]All patients should receive prompt swallow evaluation. If patients fail swallow evaluation, enteral or parenteral nutrition should be initiated.
AED = antiepileptic drug; ASA = aspirin; CT = computed tomography; DBP = diastolic blood pressure; DVT = deep vein thrombosis; ECG = electrocardiogram; ICP = intracranial pressure; INR = international normalized ratio; rt-PA = recombinant tissue plasminogen activator; SBP = systolic blood pressure; SUP = stress ulcer prophylaxis.

Algorithm for chronic management of atrial fibrillation



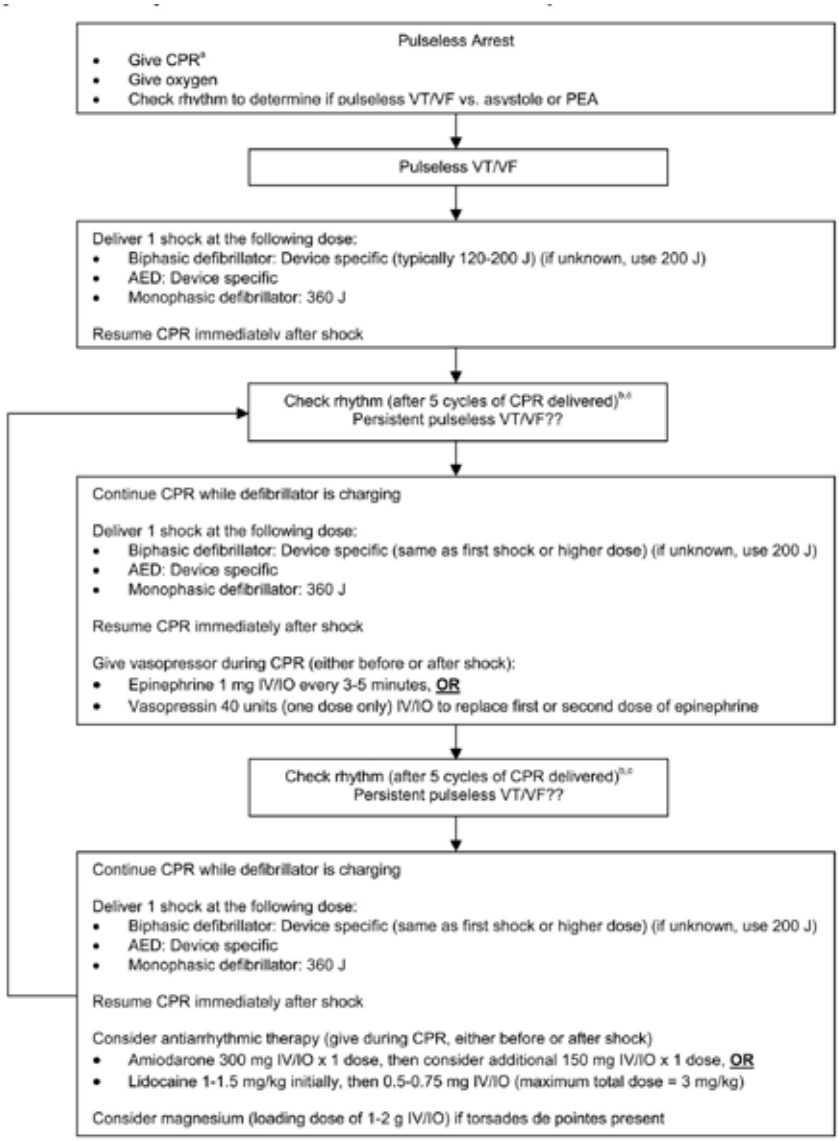
AA = antiarrhythmic; AC = anticoagulation; AF = atrial fibrillation; BP = blood pressure; CV = cardioversion; HF = heart failure; SR = sinus rhythm.
Adapted from the American College of Cardiology and American Heart Association. Fuster V, Rydén LE, Cannom DS, Crijns HJ, Curtis AB, Ellenbogen KA, et al. ACC/AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines (Writing Committee to Revise the 2001 Guidelines for the Management of Patients with Atrial Fibrillation). J Am Coll Cardiol 2006;48:e149–246.

Algorithm for selecting antiarrhythmic drug therapy for maintenance of sinus rhythm in patients with recurrent paroxysmal or recurrent persistent atrial fibrillation[a]



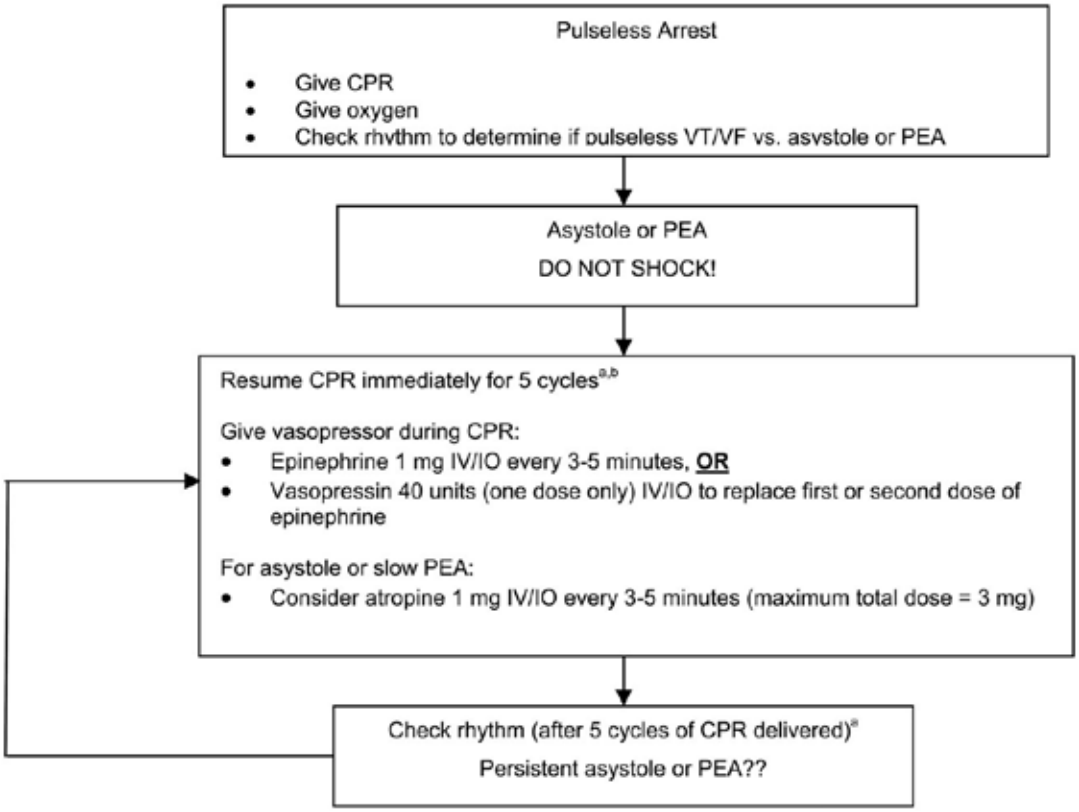
[a]Within each of the boxes, the drugs are listed alphabetically, not in order of suggested use. However, the sequence of the boxes does imply the order of suggested use.
CAD = coronary artery disease; HTN = hypertension; LVH = left ventricular hypertrophy.
Adapted from the American College of Cardiology and American Heart Association. Fuster V, Rydén LE, Cannom DS, Crijns HJ, Curtis AB, Ellenbogen KA, et al. ACC/AHA/ESC 2006 guidelines for the management of patients with atrial fibrillation: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the European Society of Cardiology Committee for Practice Guidelines (Writing Committee to Revise the 2001 Guidelines for the Management of Patients with Atrial Fibrillation). J Am Coll Cardiol 2006;48:e149–246.

Algorithm for treatment of pulseless ventricular tachycardia/ventricular fibrillation



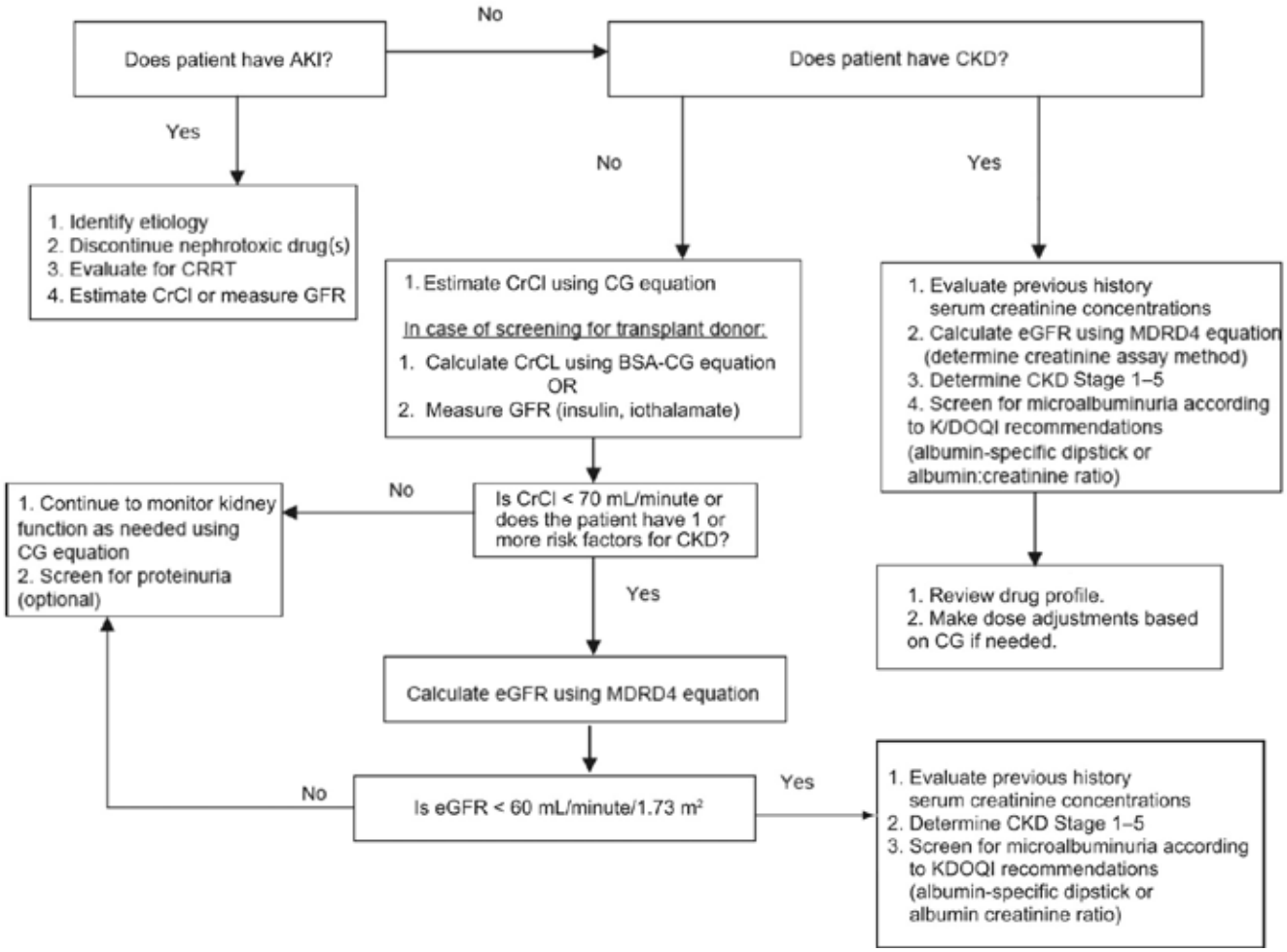
[a]If arrest is witnessed and defibrillator is readily available, 2 rescue breaths can be given before defibrillation. If arrest is unwitnessed, 5 cycles of CPR should be administered before defibrillation.
[b]One cycle of CPR = 30 chest compressions, then 2 breaths; 5 cycles about 2 minutes.
[c]After advanced airway established, cycles of CPR no longer need to be given. Instead, continuous chest compressions should be given without pauses for breaths. Give 8–10 breaths/minute.
AED = automated external defibrillator; CPR = cardiopulmonary resuscitation; IO = intraosseous; IV = intravenous; J = joules; PEA = pulseless electrical activity; VF = ventricular fibrillation; VT = ventricular tachycardia.
Adapted from the American Heart Association. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation 2005;112(Suppl 1):IV-58–IV-66.

Algorithm for treatment of asystole and pulseless electrical activity



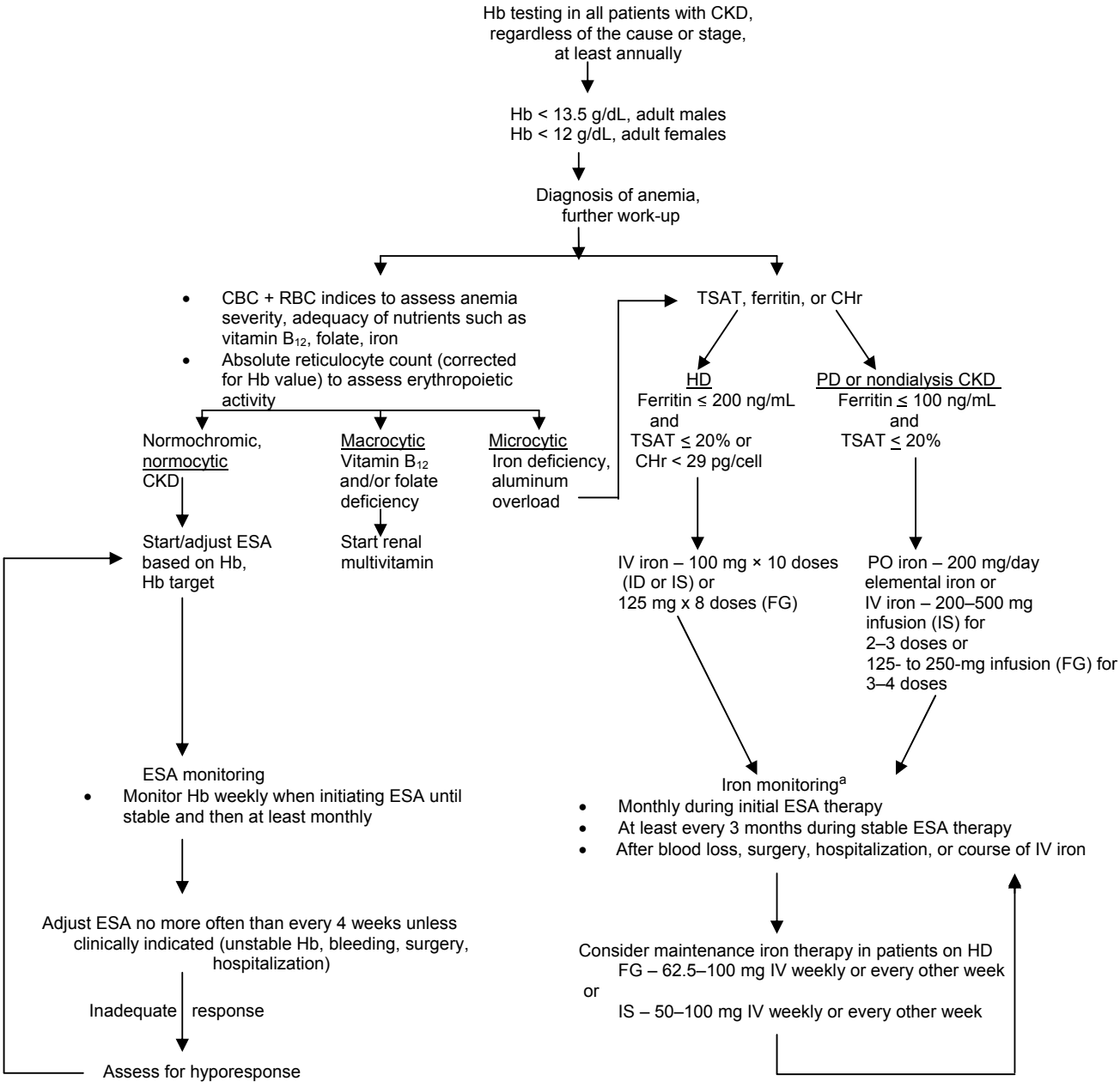
[a]One cycle of CPR = 30 chest compressions; then, 2 breaths; 5 cycles about 2 minutes.
[b]After advanced airway established, cycles of CPR no longer need to be given. Instead, continuous chest compressions should be given without pauses for breaths. Give 8–10 breaths/minute.
CPR = cardiopulmonary resuscitation; IO = intraosseous; IV = intravenous; PEA = pulseless electrical activity; VF = ventricular fibrillation; VT = ventricular tachycardia.
Adapted from the American Heart Association. 2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation 2005;112(suppl 1):IV-58–IV-66.

Algorithm for assessing kidney function



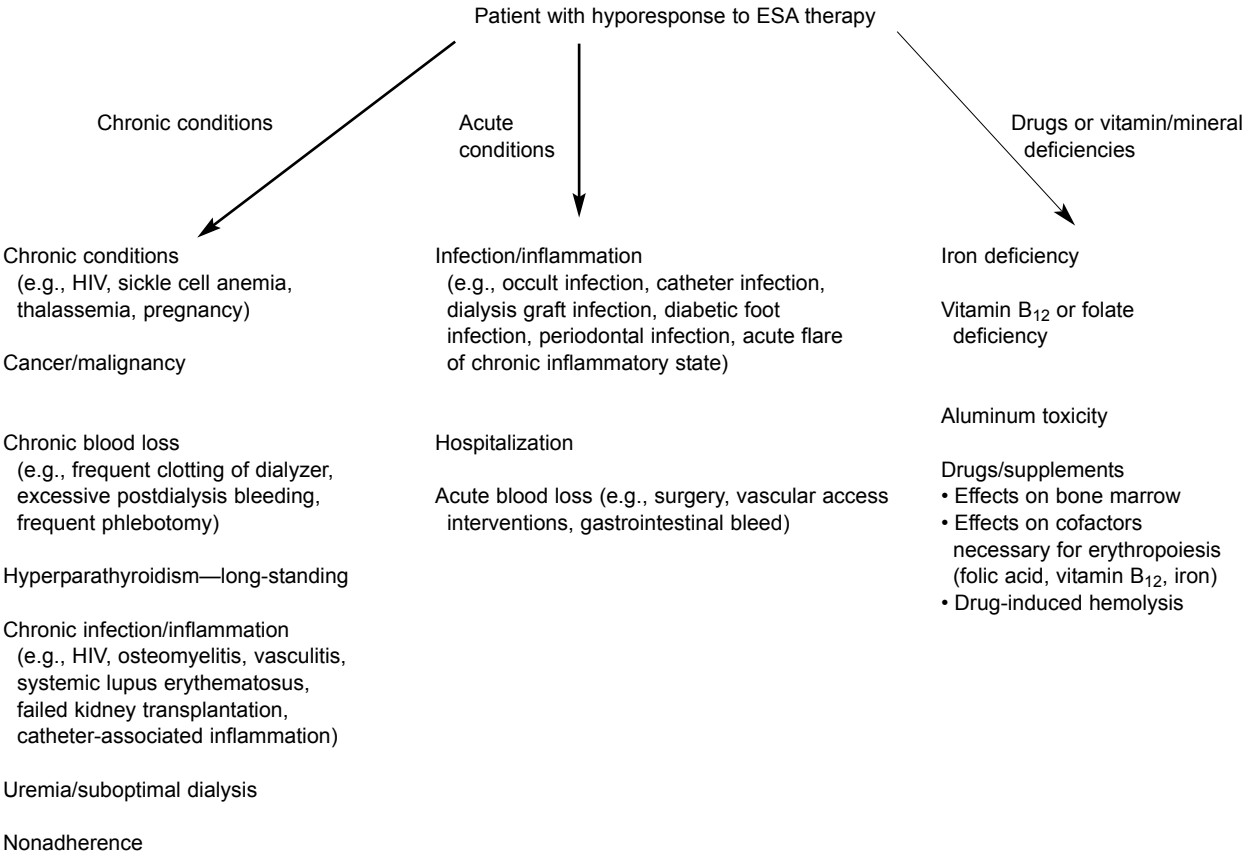
AKI = acute kidney injury; BSA = body surface area; CG = Cockcroft-Gault; CKD = chronic kidney disease; CrCl = creatinine clearance; CRRT = continuous renal replacement therapy; eGFR = estimated glomerular filtration rate; GFR = glomerular filtration rate; KDOQI = Kidney Disease Outcomes Quality Initiative; MDRD4 = 4-variable Modification of Diet in Renal Disease.

Anemia treatment algorithm



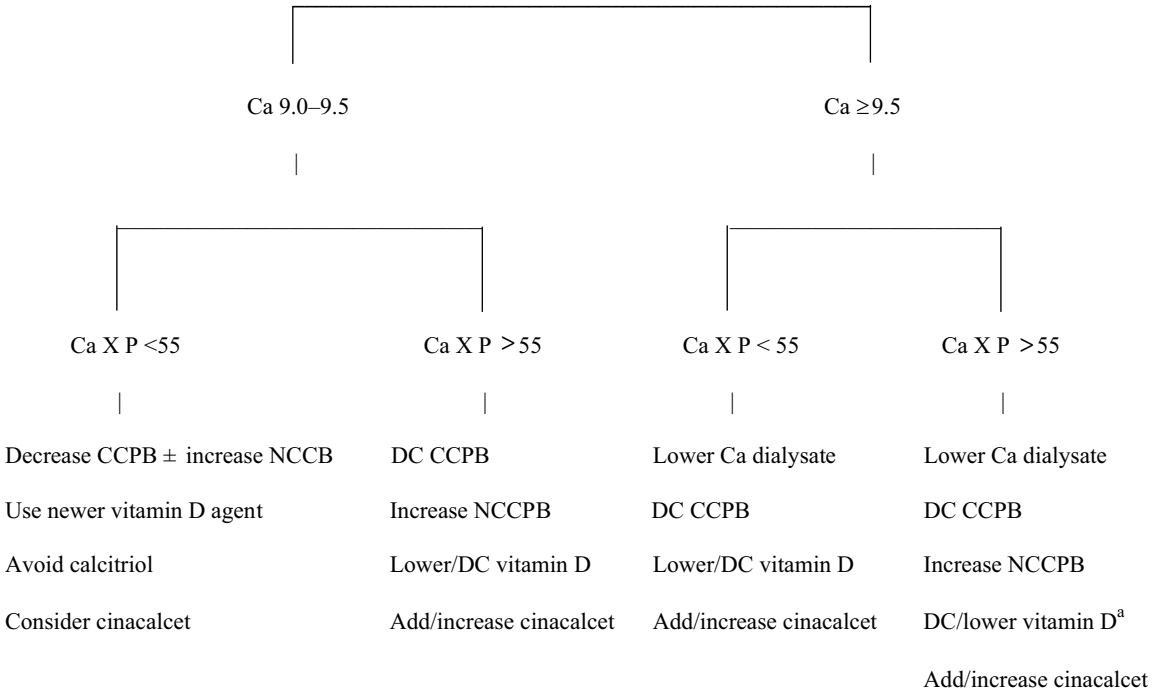
[a]Wait 1–2 weeks to evaluate iron status if intravenous doses greater than 200 mg are administered.
CBC = complete blood cell (count); CHr = reticulocyte hemoglobin; CKD = chronic kidney disease; ESA = erythropoiesis-stimulating agent; FG = ferric gluconate; Hb = hemoglobin; HD = hemodialysis; ID = iron dextran; IS = iron sucrose; IV = intravenous; PD = peritoneal dialysis; PO = by mouth; RBC = red blood cell; TSAT = transferrin saturation.
Adapted from the American College of Clinical Pharmacy. Stamatakis MK. Chronic kidney disease. In: Mueller BA, Bertch KE, Dunsworth TS, Fagan SC, Hayney MS, O'Connell MB, et al, eds. Pharmacotherapy Self-Assessment Program, 4th ed. Nephrology Module. Kansas City; MO: American College of Clinical Pharmacy, 2003:187.

Causes of ESA hyporesponse



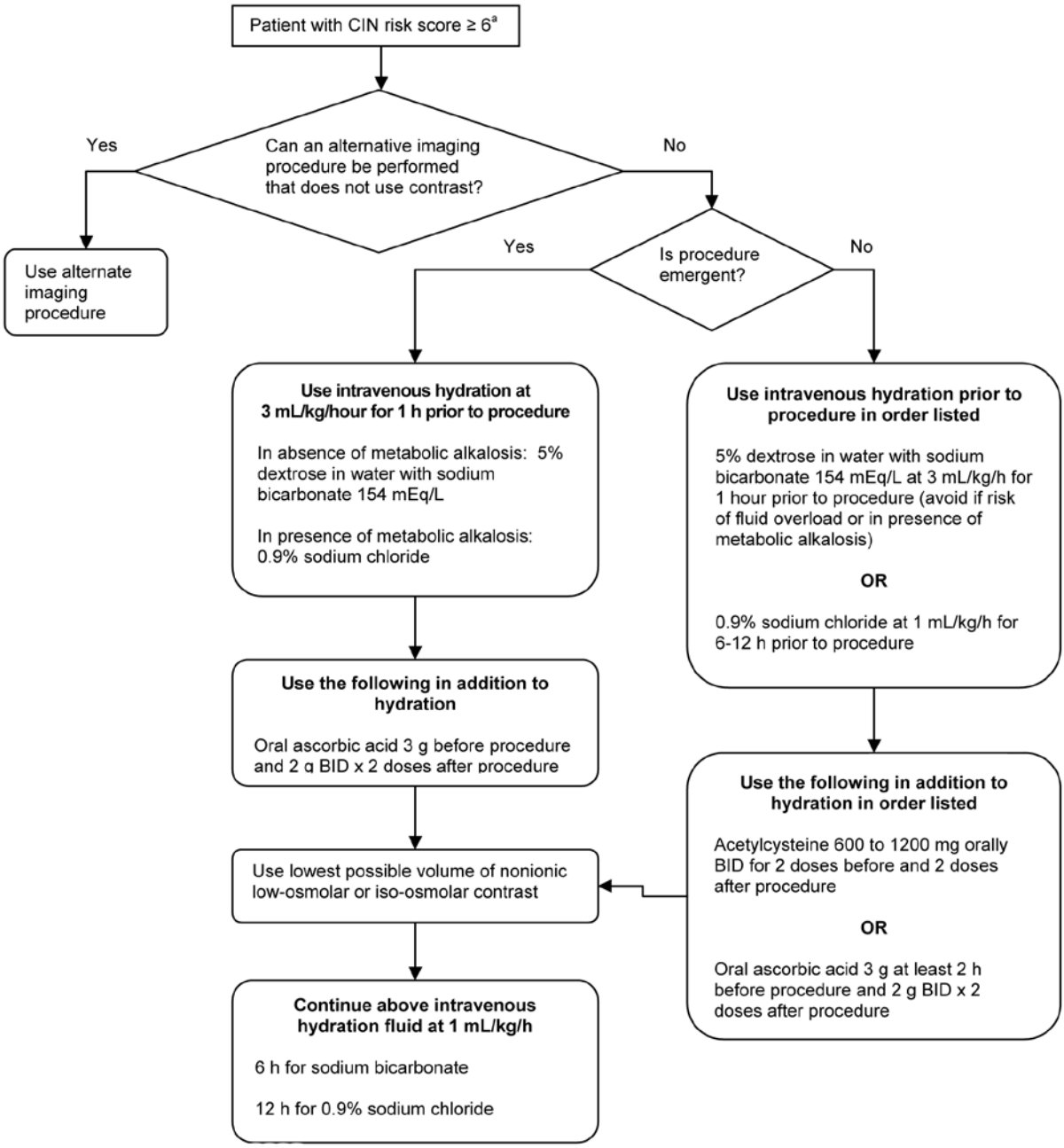
ESA = erythropoiesis-stimulating agent; HIV = human immunodeficiency virus.

Options for managing chronic kidney disease-mineral and bone disorder for patients with elevated iPTH and normal/low calcium concentrations



[a]Lower/DC vitamin D = decrease dose or discontinue calcitriol/paricalcitol/doxercalciferol until Ca X P < 55 mg^2/dL^2.
Ca = calcium mg/dL; Ca X P = calcium/phosphate product mg^2/dL^2; CCPB = calcium-containing phosphate binder; DC = discontinue; NCCPB = noncalcium containing phosphate binder; P = phosphorus in mg/dL.

Decision algorithm for prevention of CIN



[a]Based on risk score calculated using table on p. 18.
BID = 2 times/day; CIN = contrast-induced nephropathy.

Approach to the risk assessment of CIN after percutaneous coronary intervention

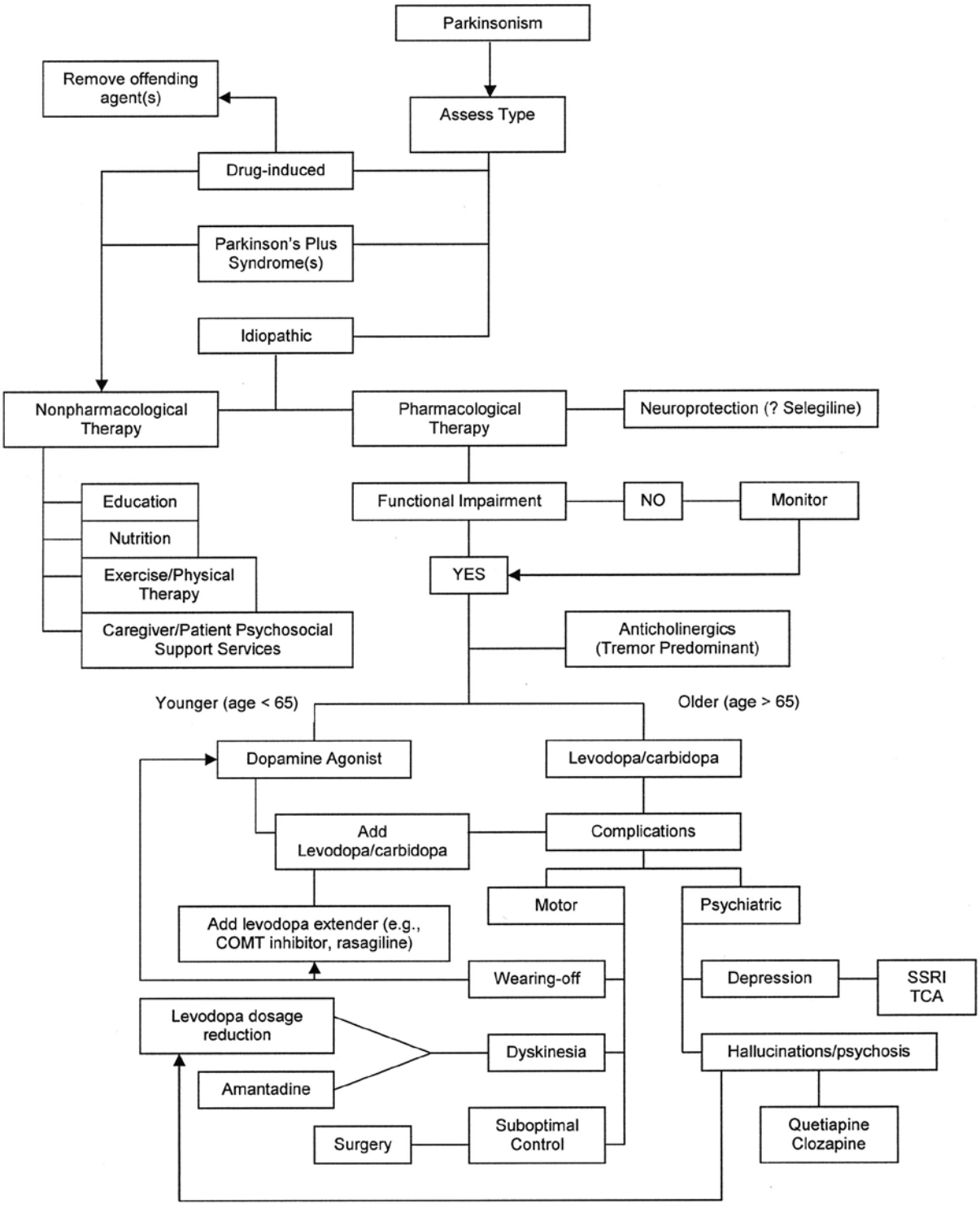
Risk Factor	Definition	Risk Score
Hypotension	SBP < 80 mm Hg for at least 1 hour requiring inotropic support or IABP within 24 hours periprocedural	5
Use of IABP		5
CHF	NYHA class III/IV and/or history of pulmonary edema	5
Elderly	Age > 75 years	4
Anemia	Hct < 39% for men or Hct < 36% for women	3
Diabetes mellitus		3
Contrast volume	For every 100 mL	1
Kidney disease		
Baseline SCr	SCr >1.5	4
OR		
Baseline GFR[a]	40–59 mL/minute/1.73 m^2	2
	20–39 mL/minute/1.73 m^2	4
	< 20 mL/minute/1.73 m^2	6

Risk Assessment

Total Risk Score	Risk Group	Risk of CIN	Risk of Dialysis
≤ 5	Low	7.5%	0.04%
6–10	Moderate	14%	0.12%
11–15	High	26.1%	1.09%
≥ 16	Very high	57.3%	12.5%

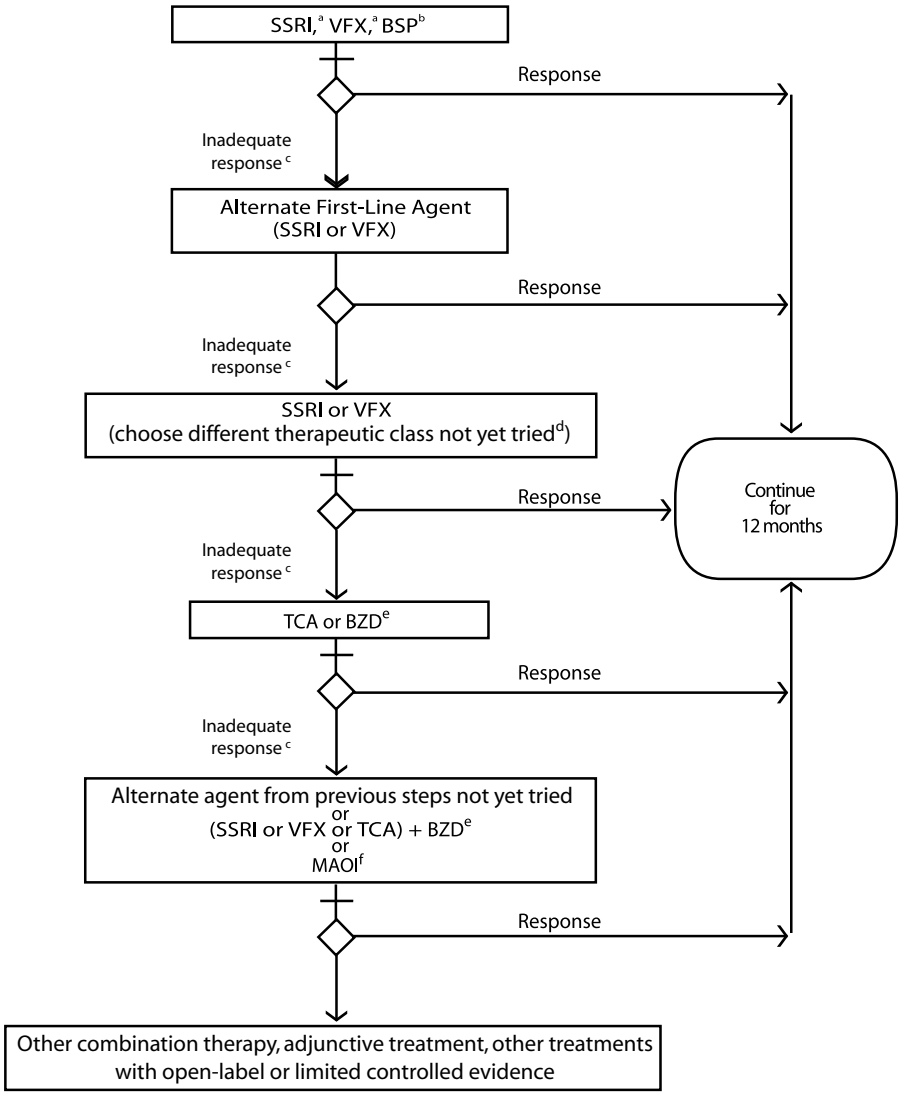
[a]Estimated using the Modification of Diet in Renal Disease Equation.
CIN = contrast-induced nephropathy; CHF = congestive heart failure; GFR = glomerular filtration rate; Hct = hematocrit; IABP = intra-arterial balloon pump; NYHA = New York Heart Association; SBP = systolic blood pressure; SCr = serum creatinine.
Reprinted with permission from Elsevier. Mehran R, Aymong ED, Nikolsky E, Lasic Z, Iakovou I, Fahy M, et al. A simple risk score for prediction of contrast-induced nephropathy after percutaneous coronary intervention. J Am Coll Cardiol 2004;44:1393–9.

Algorithm for the management of Parkinson's disease



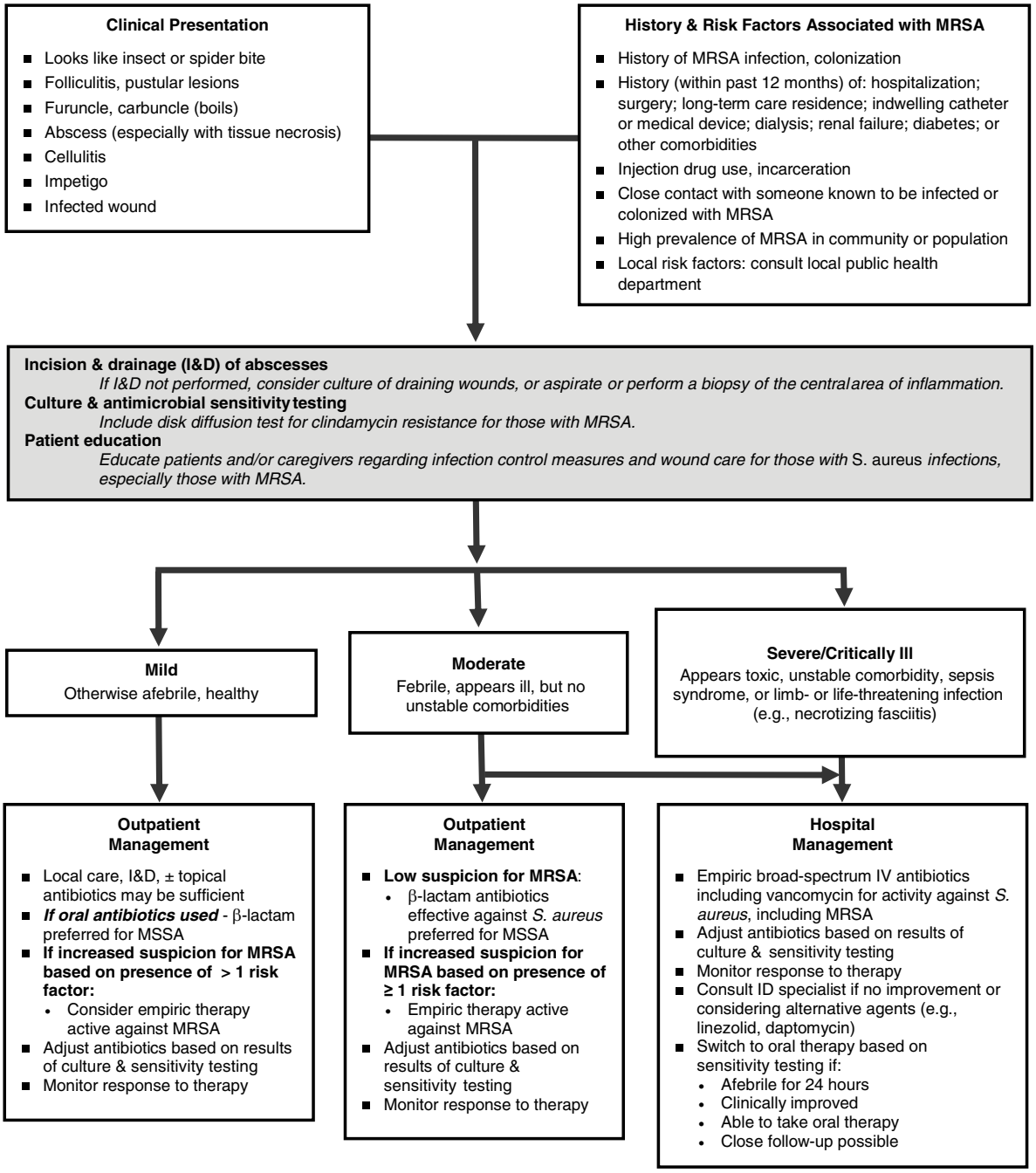
COMT = catechol-*O*-methyl-transferase; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant.

Algorithm for use in guiding the treatment of generalized anxiety disorder and panic disorder



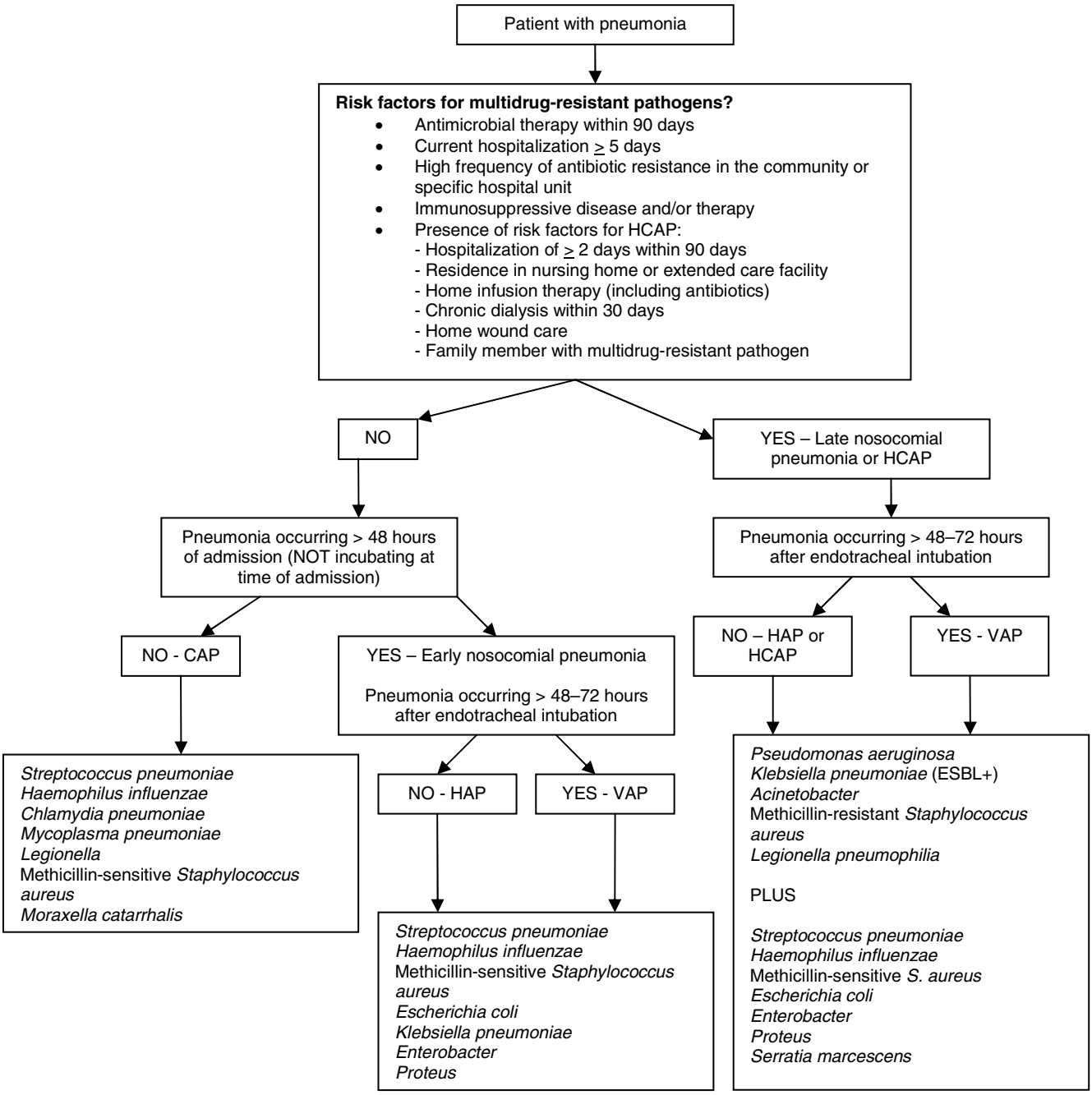
[a] If acute relief needed or increase in anxiety or insomnia on initiation, may overlap with a short term (2–4 weeks) BZD.
[b] Only for initial, nonrefractory treatment of GAD.
[c] After trial of 8–12 weeks at adequate dose, may try increasing dose if good tolerability.
[d] Try VFX if not yet tried, or try and alternate SSRI therapy if patient has not responded to an adequate trial of both an SSRI and VFX.
[e] BZD not recommended in patients with past or current comorbid substance abuse or dependence.
[f] Only for treatment of PD.
BSP = buspirone; BZD = benzodiazepine; GAD = generalized anxiety disorder; MAOI = monoamine oxidase inhibitor; PD = panic disorder; SSRI = selective serotonin reuptake inhibitor; TCA = tricyclic antidepressant; VFX = venlafaxine.

Management of suspected *Staphylococcus aureus* skin and soft tissue infections



Adapted with permission from Interim guidelines for evaluation & management of community-associated methicillin-resistant *Staphylococcus aureus* skin and soft tissue infections in outpatient settings, which was developed collaboratively by the Infectious Diseases Society of Washington and Public Health—Seattle and King County, Tacoma-Pierce County Department of Health, and Washington State Department of Health.
ID = infectious diseases; IV = intravenous; MRSA = methicillin-resistant *S. aureus*; MSSA = methicillin-sensitive *S. aureus*.

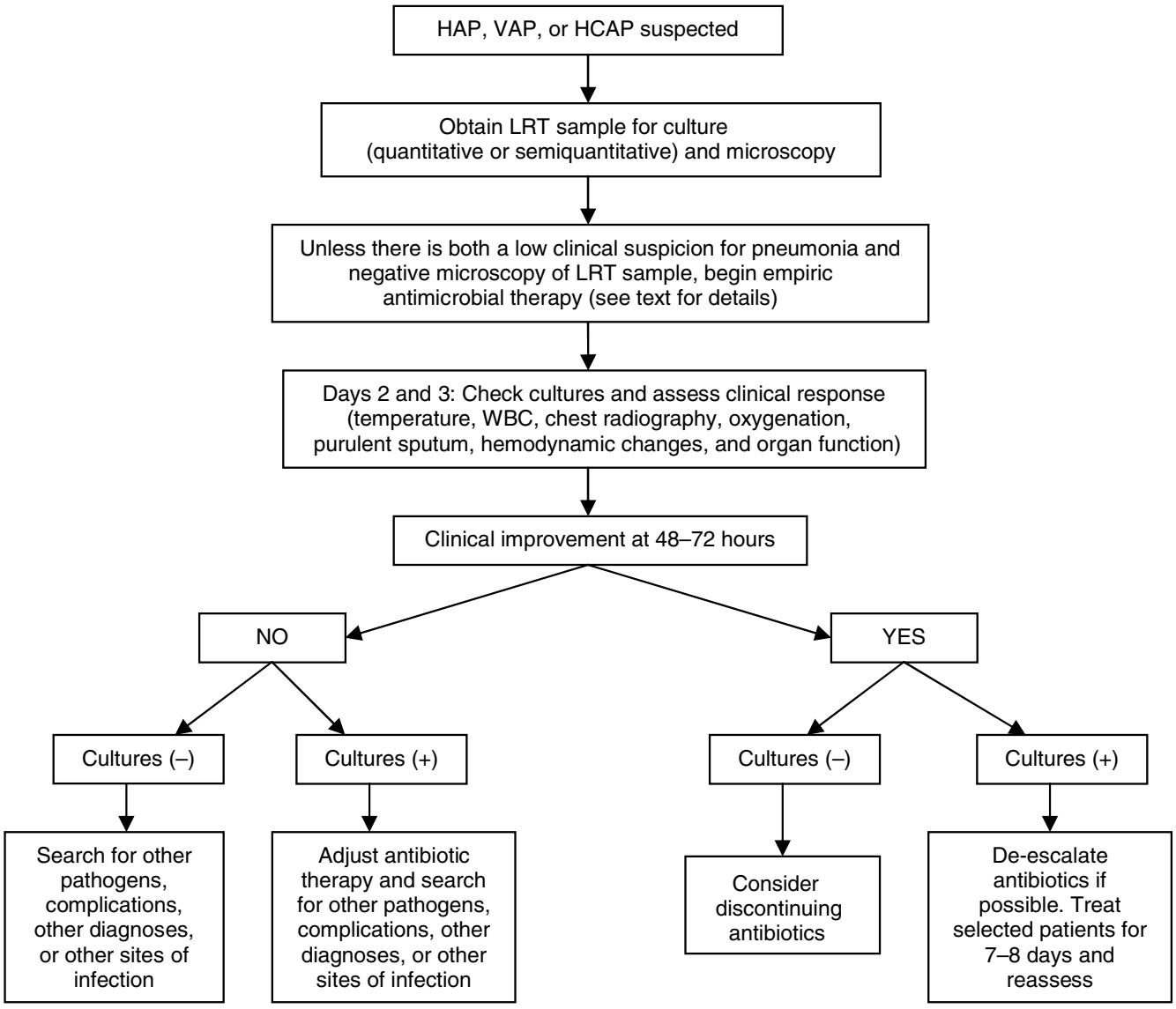
Classification of nosocomial pneumonia



CAP = community-acquired pneumonia; ESBL = extended-spectrum β-lactamase; HAP = hospital-acquired pneumonia; HCAP = health care–associated pneumonia; VAP = ventilator-associated pneumonia.

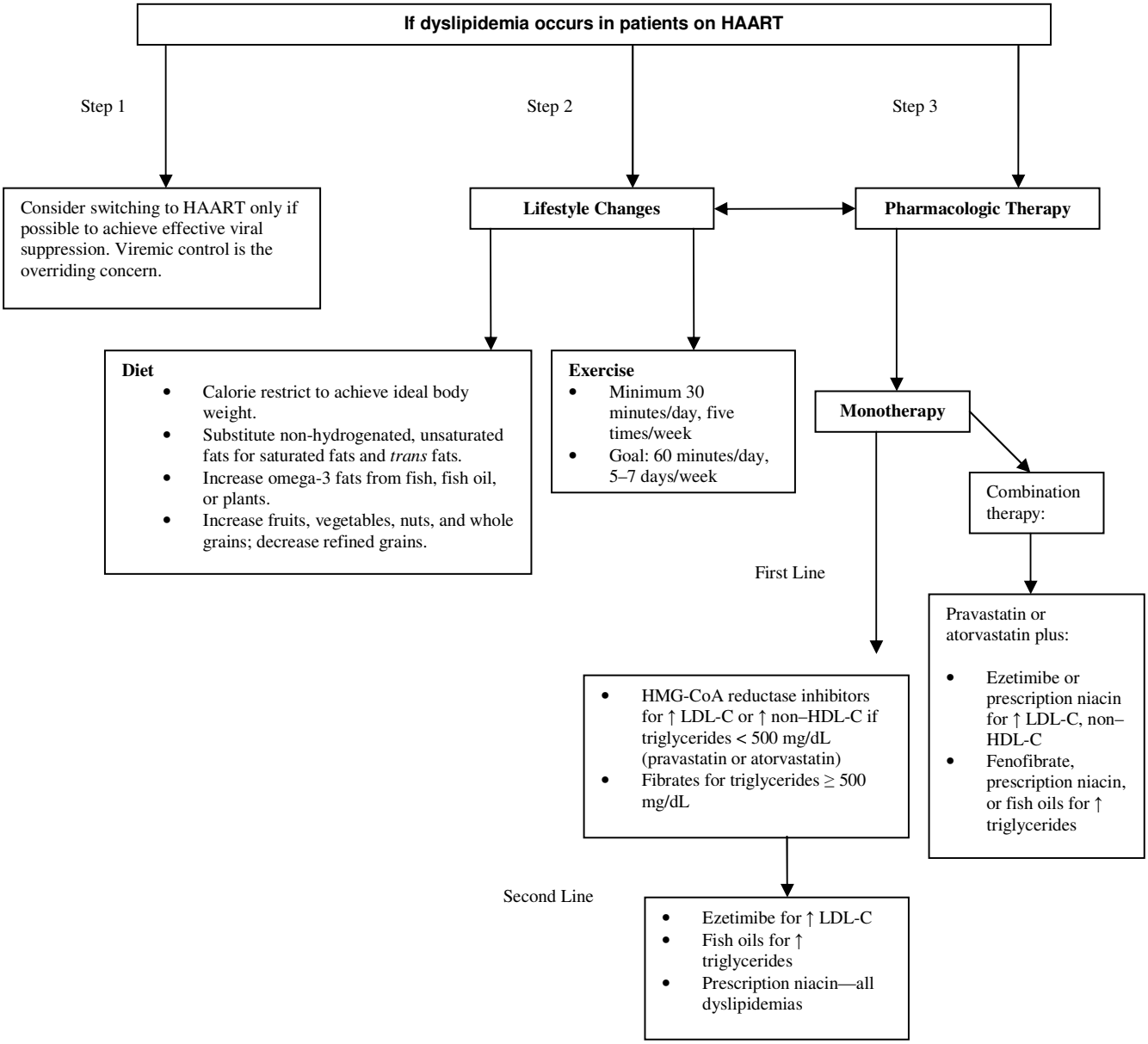
Adapted with permission from: Guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. Am J Respir Crit Care Med 2005;171:388–416.

Management strategy recommended by the American Thoracic Society/ Infectious Diseases Society of America guidelines



HAP = hospital-acquired pneumonia; HCAP = health care–associated pneumonia; LRT = lower respiratory tract; VAP = ventilator-associated pneumonia; WBC = white blood cell count.
Adapted with permission from: Guidelines for the management of adults with hospital-acquired, ventilator-associated, and healthcare-associated pneumonia. Am J Respir Crit Care Med 2005;171:388–416.

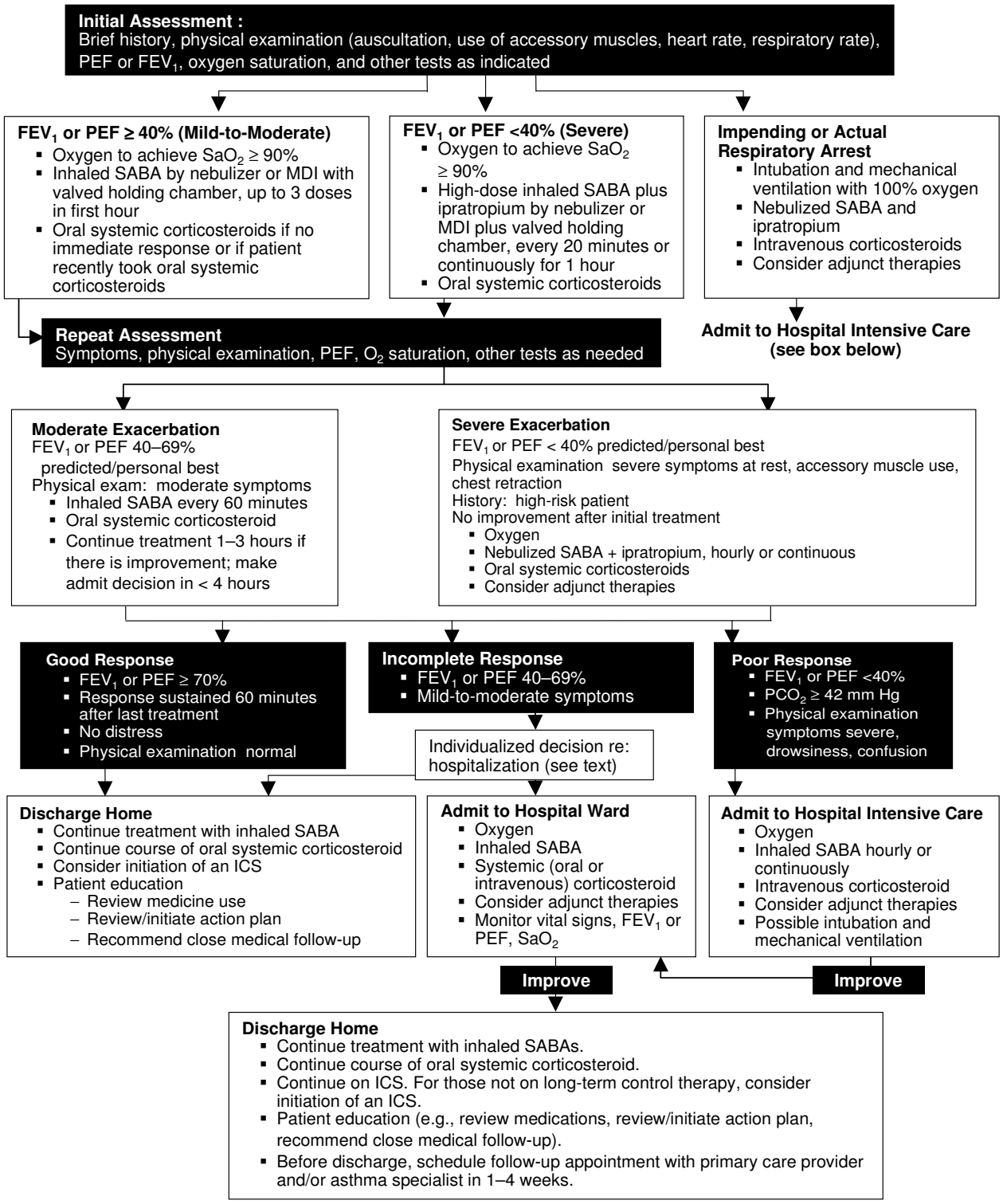
Treatment algorithm for HIV-associated dyslipidemia



HAART = highly active antiretroviral therapy; HDL-C = high-density lipoprotein cholesterol; HIV = human immunodeficiency virus; HMG-CoA = 3-hydroxy-3-methylglutaryl coenzyme A; LDL-C = low-density lipoprotein cholesterol.

Adapted with permission from Stein JH. Managing cardiovascular risk in patients with HIV infection. J Acquir Immune Defic Syndr 2005;38:115–23.

Management of acute asthma exacerbations



Reprinted from NHLBI National Asthma Education and Prevention Program, Expert Panel Report 3. Guidelines for the Diagnosis and Management of Asthma. NIH Publication No. 07-4051. Bethesda, MD: U.S. Department of Health and Human Services, 2007.

Overview of BTF guidelines for the management of patients with TBI

Initial Assessment/Goals

1. Avoid pre- and in-hospital hypotension (systolic blood pressure < 90 mm Hg) (Class II)
2. Avoid hypoxia (partial pressure oxygen < 60 mm Hg, arterial oxygen saturation < 90 mm Hg) (Class III)
3. Early evaluation of mass lesions for potential surgical decompression
4. ICP monitoring if:
   a. GCS scores 3–8 and *abnormal* CT scan (Class II)
   b. GCS scores 3–8 and *normal* CT scan if two present: older than 40 years, posturing, systolic blood pressure < 90 mm Hg (Class I)
5. Maintain ICP < 20 mm Hg (Class II)
6. Maintain CPP > 60 mm Hg; no aggressive attempts for CPP > 70 mm Hg (Class II)
7. Jugular venous oxygen saturation < 50% or brain tissue oxygen tension < 15 mm Hg are treatment thresholds (when available) (Class III)
8. No high-dose corticosteroids (Class I)
9. Arterial line for blood pressure monitoring
10. Central line for central venous pressure monitoring
11. Elevate head of bed 30 degrees and keep head straight to avoid venous outflow obstruction
12. Early intubation in most patients with severe TBI
    a. No prophylactic hyperventilation (partial pressure of carbon dioxide ≤ 25 mm Hg) (Class II)
    b. Hyperventilation may be used as a temporizing measure for elevated ICP (Class III)

Management of Intracranial Hypertension

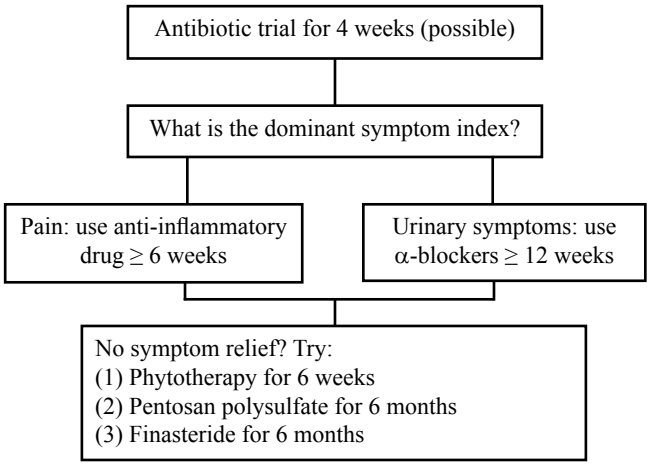
1. Maintain CPP with fluids and vasopressors
2. Tier 1 Therapies:
   a. Drain cerebrospinal fluid by external ventricular drain
   b. Mild hyperventilation if > 24 hours postinjury (partial pressure of carbon dioxide 35–38 mm Hg); monitor brain tissue oxygen tension or jugular venous oxygen saturation if partial pressure of carbon dioxide < 35 mm Hg (Class III)
3. Tier 2 Therapies:
   a. Hyperosmolar therapy
      i. Mannitol if serum osmolality < 320 mOsm/kg water (avoid hypotension) (Class II)
      ii. Hypertonic saline (caution use with chronic hyponatremia)
4. Tier 3 Therapies:
   a. Heavy sedation with propofol (Class II)
   b. Consider paralysis if sedation inadequate
5. Tier 4 Therapy:
   a. Hypothermia (target 33ºC for > 48 hours) (Class III)
6. Tier 5 Therapy:
   a. Consider surgery for decompressive craniectomy
7. Tier 6 Therapy:
   a. Barbiturate coma (if refractory to maximum medical and surgical therapies) (Class II)

Supportive Care

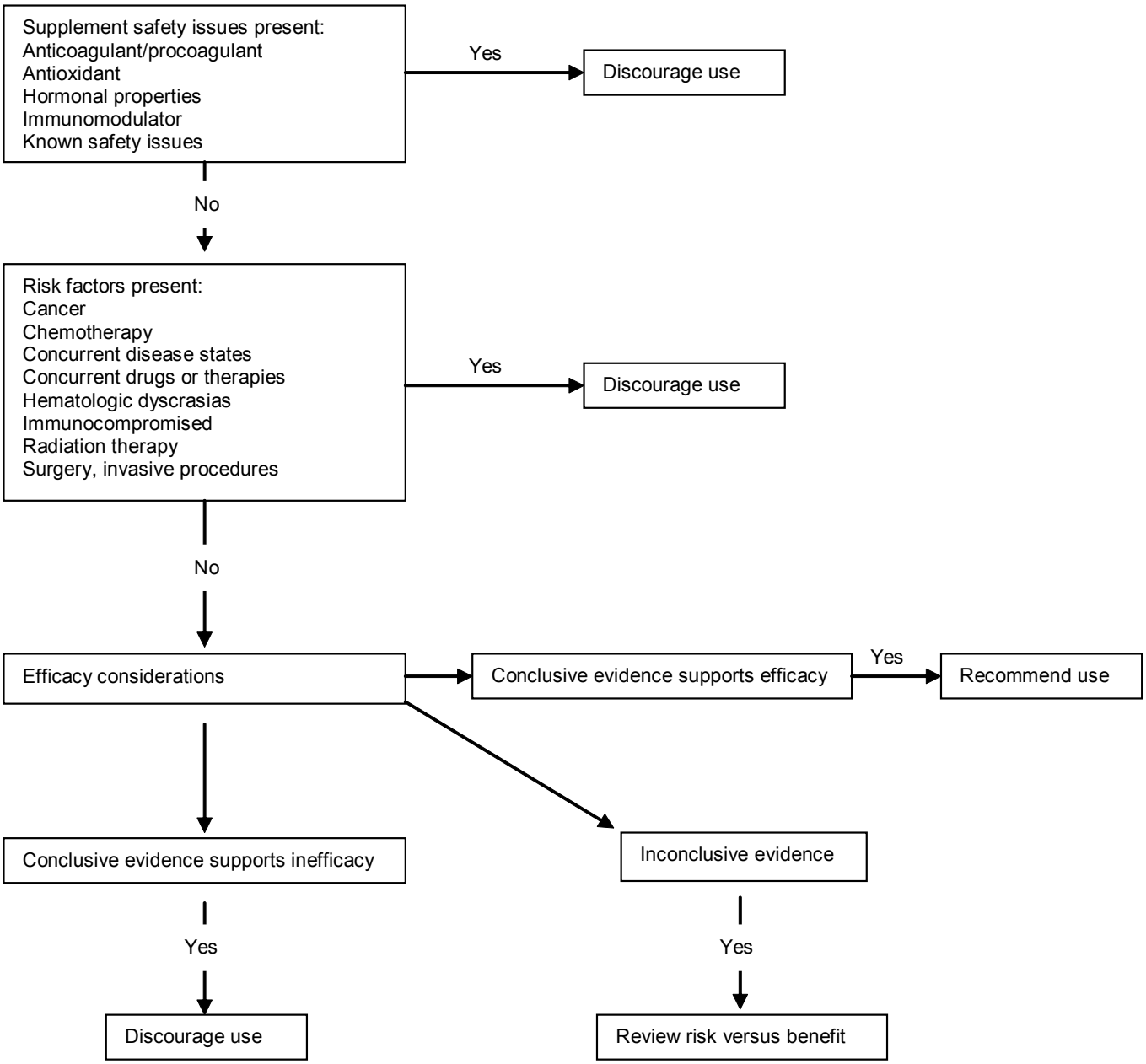
1. Adequate control of pain and agitation
2. Phenytoin for prevention of early seizures (Class II)
3. Full nutrition goal by day 7 postinjury (Class II)
4. Deep vein thrombosis prophylaxis (Class III)
5. Blood glucose goal 80–150 mg/dL
6. Stress ulcer prophylaxis if mechanically ventilated or coagulopathic
7. Maintain normothermia

Class I = good-quality randomized controlled trial; Class II = moderate-quality randomized controlled trial, good-quality cohort, or good-quality case control; Class III = poor-quality randomized controlled trial, moderate/poor-quality cohort, moderate/poor-quality case control or database/registry review and case series.
BTF = Brain Trauma Foundation; CPP = cerebral perfusion pressure; CT = computed tomography; GCS = Glasgow Coma Scale; ICP = intracranial pressure; TBI = traumatic brain injury.

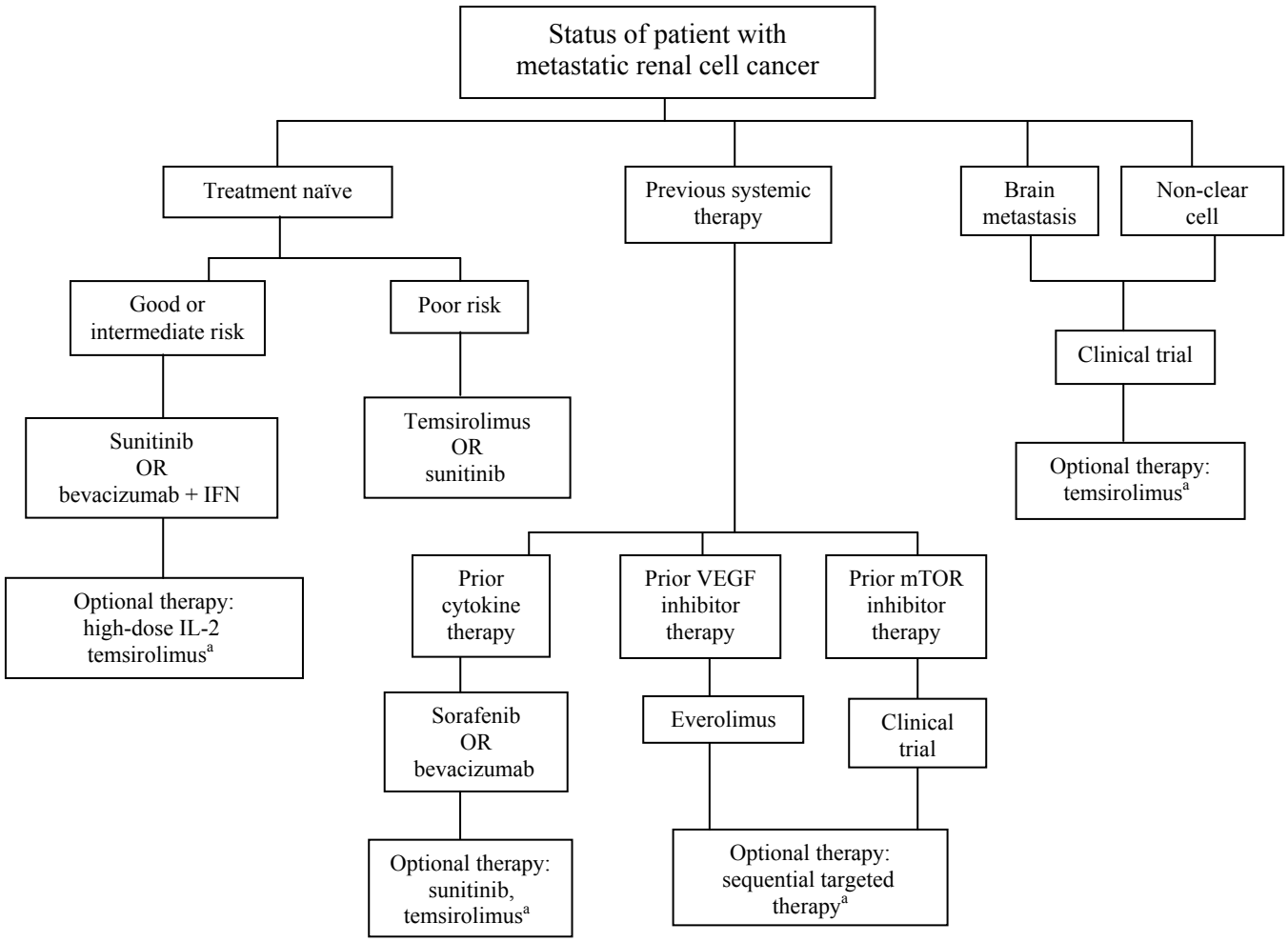
Treatment algorithm for chronic prostatitis/chronic pelvic pain syndrome



Decision algorithm for evaluation of dietary supplement use

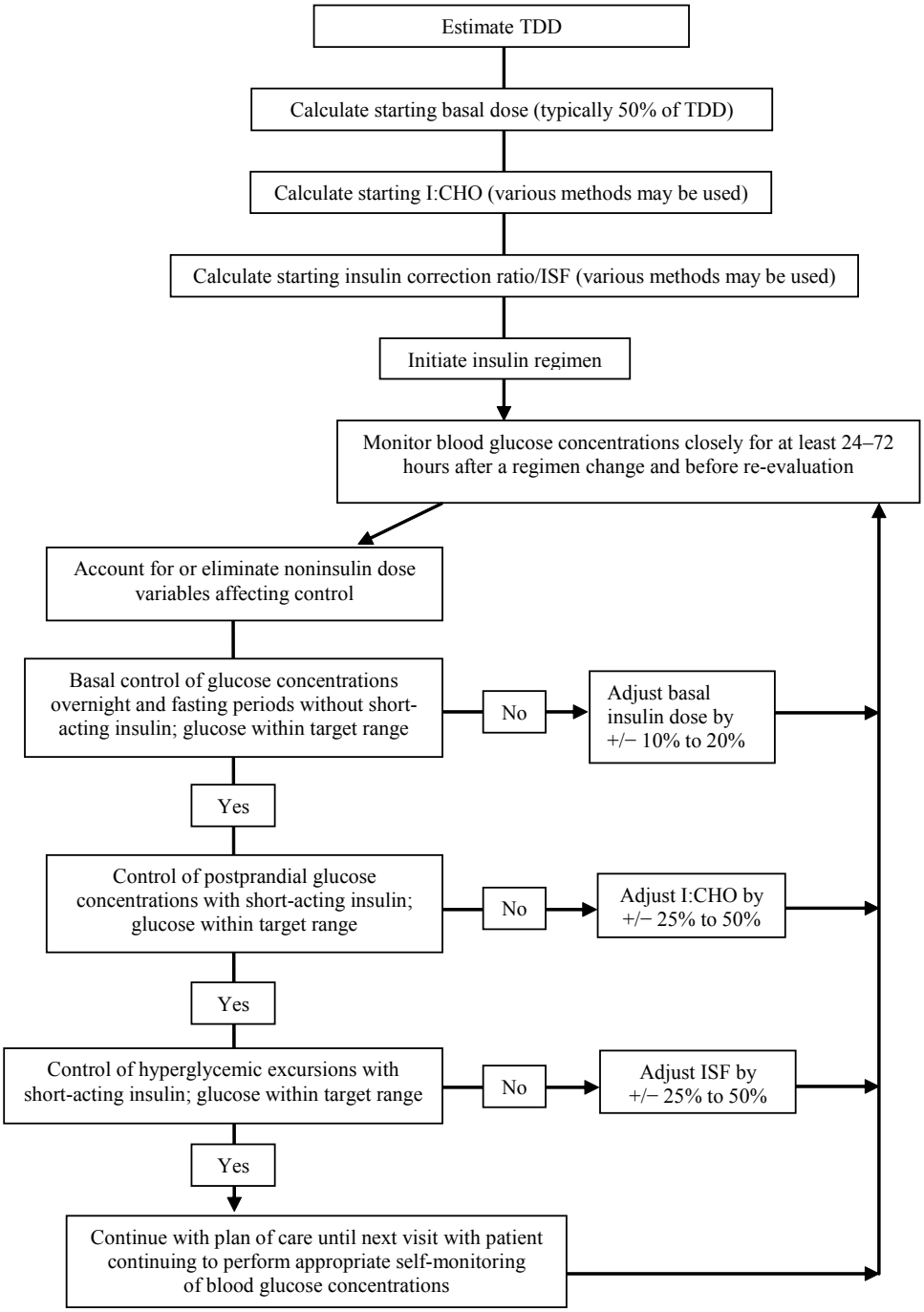


Proposed algorithm for metastatic renal cell cancer therapy based on patient presentation



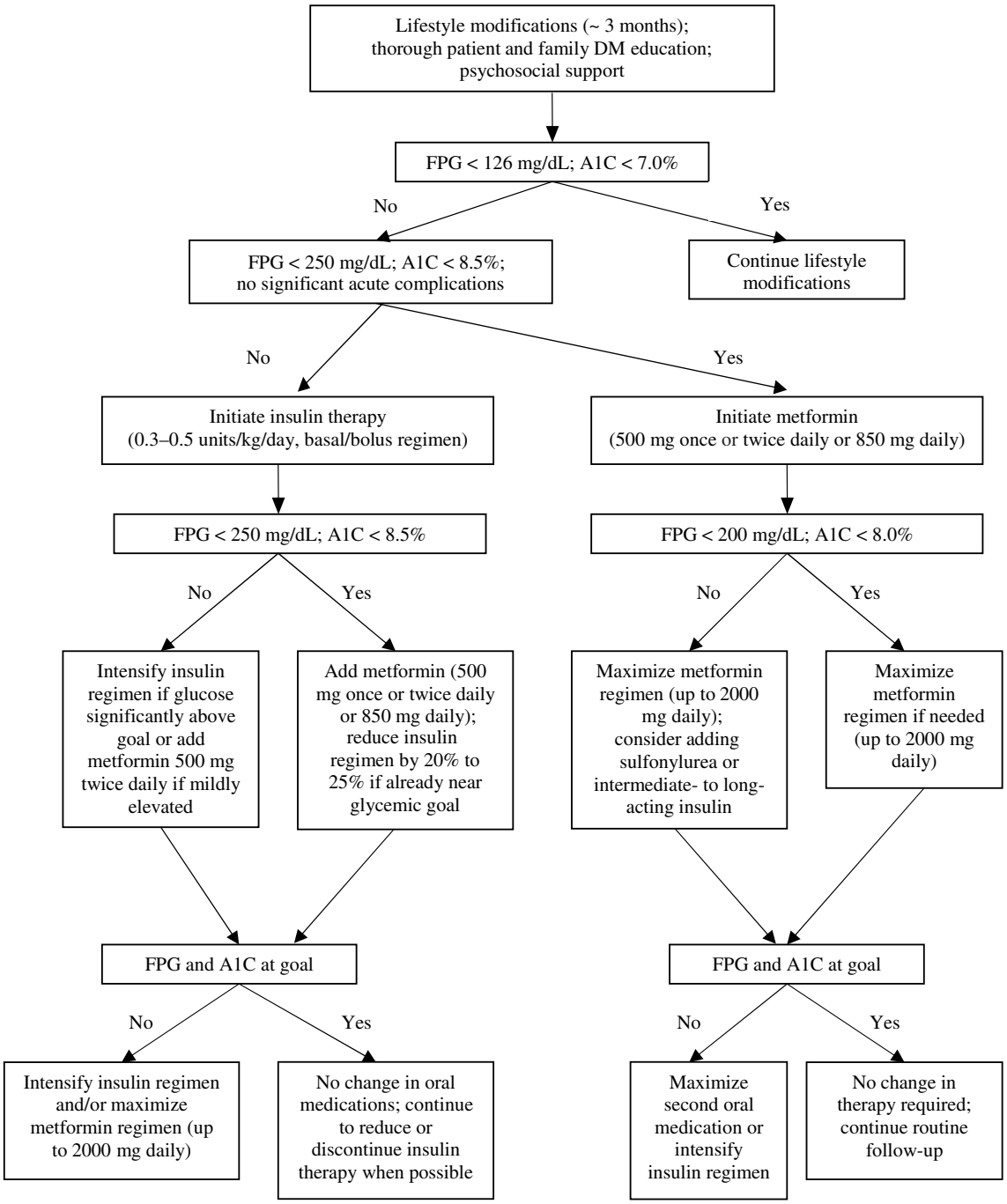
[a]May consider, although limited clinical evidence.
IFN = interferon alfa; IL-2 = interleukin-2 (aldesleukin); mTOR = mammalian target of rapamycin; VEGF = vascular endothelial growth factor.

Algorithm for management of a basal/bolus insulin regimen in children and adolescents



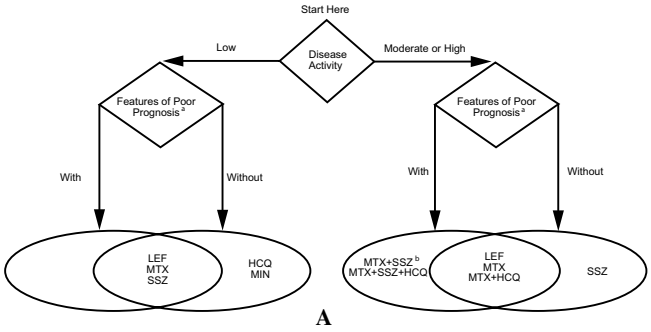
I:CHO = insulin-to-carbohydrate ratio; ISF = insulin sensitivity factor; TDD = total daily insulin dosage or requirement.

Treatment algorithm for type 2 diabetes mellitus in adolescents

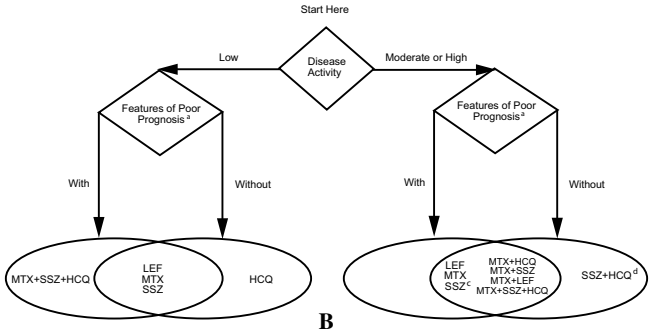


A1C = hemoglobin A1C; DM = diabetes mellitus; FPG = fasting plasma glucose.

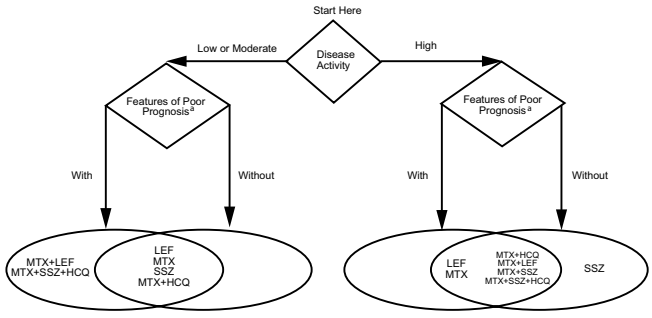
Recommendations on indications for the use of nonbiologic disease-modifying antirheumatic drugs (DMARDs) in rheumatoid arthritis (RA) patients who have never received DMARDs



A



B



C

These recommendations do not specifically include the potential role of glucocorticoids or nonsteroidal anti-inflammatory drugs in the treatment of patients with RA. Therapies are listed alphabetically. A, disease duration of less than 6 months; B, disease duration of 6–24 months; C, disease duration of greater than 24 months.

[a]Includes functional limitation (defined using standard measurement scales such as Health Assessment Questionnaire score or variations of this scale), extra-articular disease (e.g., presence of rheumatoid nodules, secondary Sjögren's syndrome, RA vasculitis, Felty's syndrome, RA lung disease), rheumatoid factor positivity, positive anticyclic citrullinated peptide antibodies, or bony erosions by radiography.

[b]Recommended only for patients with high disease activity with features of poor prognosis.

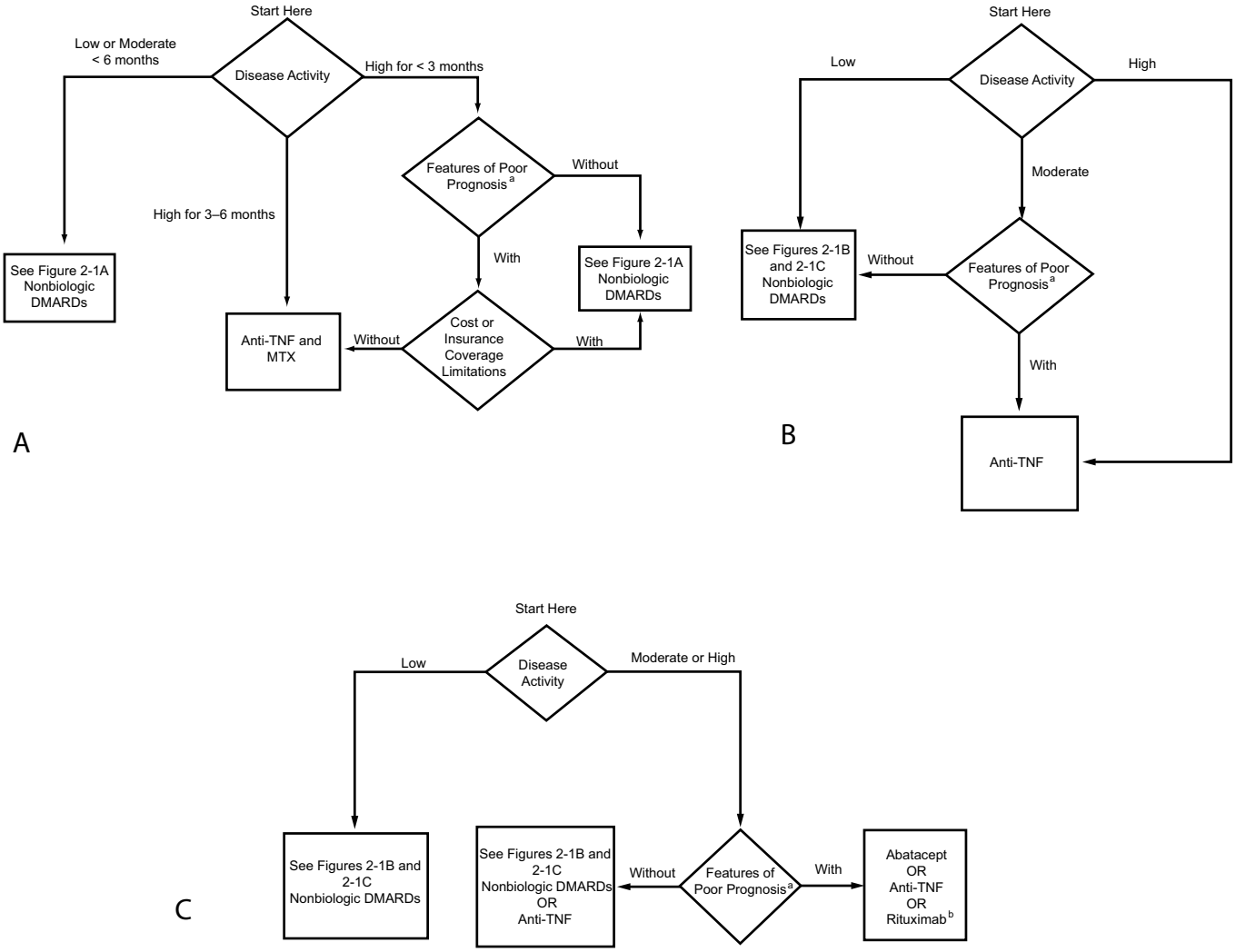
[c] Recommended only for patients with moderate disease activity irrespective of prognostic features and patients with high disease activity without features of poor prognosis.

[d]Only recommended for patients with high disease activity without features of poor prognosis.

HCQ = hydroxychloroquine; LEF = leflunomide; MIN = minocycline; MTX = methotrexate; SSZ = sulfasalazine.

Reprinted with permission from Saag KG, Teng GG, Patkar NM, Anuntiyo J, Finney C, Curtis JR, et al. American College of Rheumatology 2008 recommendations for the use of nonbiologic and biologic disease-modifying antirheumatic drugs in rheumatoid arthritis. Arthritis Rheum 2008;59:762–84. Available at *www.rheumatology.org/publications/guidelines/recommendations.asp?aud=mem*. Accessed May 11, 2009.

Recommendations on indications for the use of biologic disease-modifying antirheumatic drugs (DMARDs) in patients with rheumatoid arthritis (RA)



These recommendations do not specifically include the potential role of glucocorticoids or nonsteroidal anti-inflammatory drugs in the treatment of patients with RA. Therapies are listed alphabetically. A, patients with RA less than 6 months; B, patients with RA for 6 months or longer whose prior MTX monotherapy failed; C, patients with RA disease 6 months or longer whose prior MTX combination therapy failed or after sequential administration of other nonbiologic DMARDs.

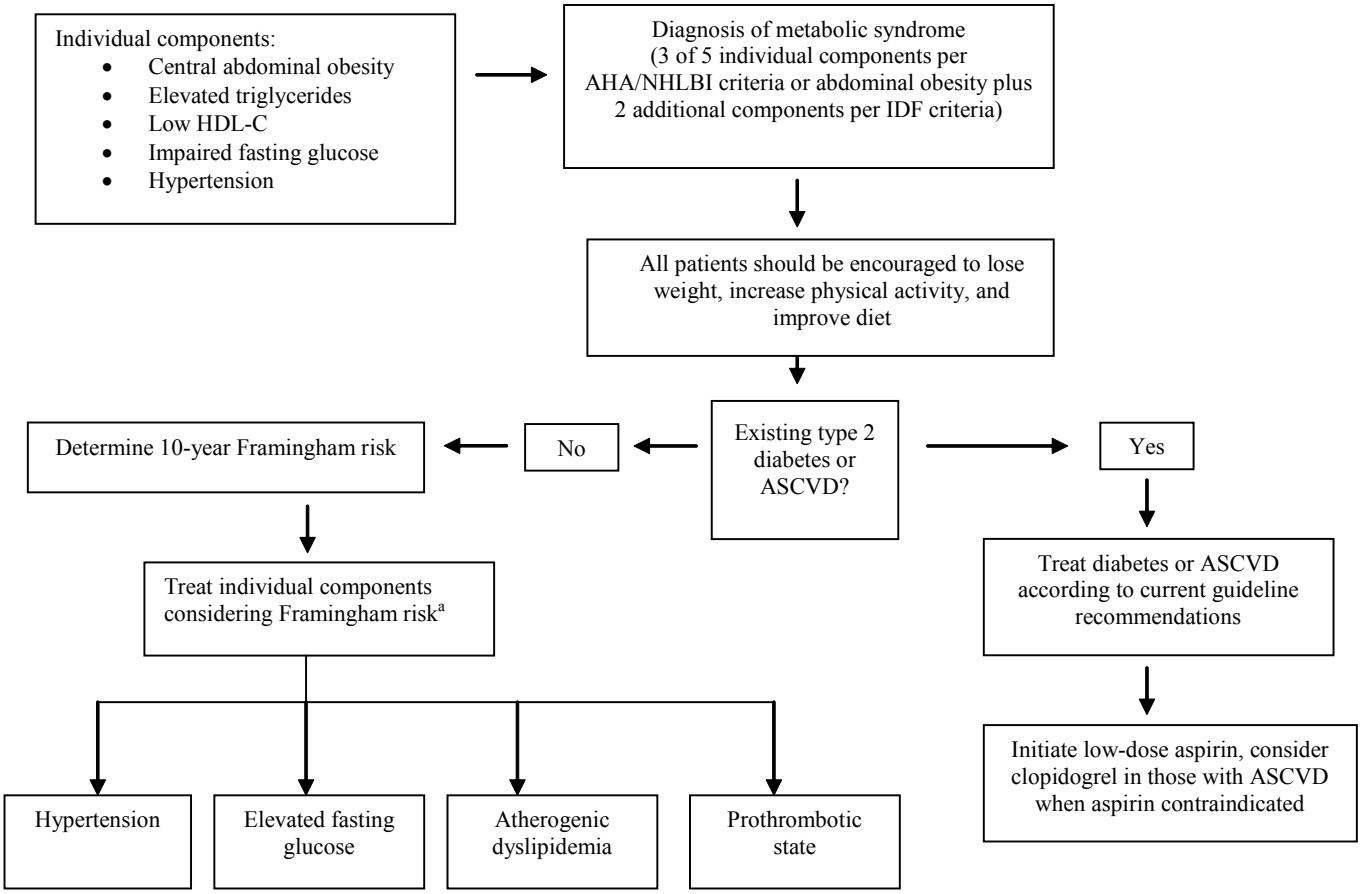
[a]Includes functional limitation (defined using standard measurement scales such as Health Assessment Questionnaire score or variations of this scale), extra-articular disease (e.g., presence of rheumatoid nodules, secondary Sjögren's syndrome, RA vasculitis, Felty's syndrome, RA lung disease), rheumatoid factor positivity, positive anticyclic citrullinated peptide antibodies, or bony erosions by radiography.

[b]Recommended only for patients with high disease activity with features of poor prognosis.

MTX = methotrexate; TNF = tumor necrosis factor.

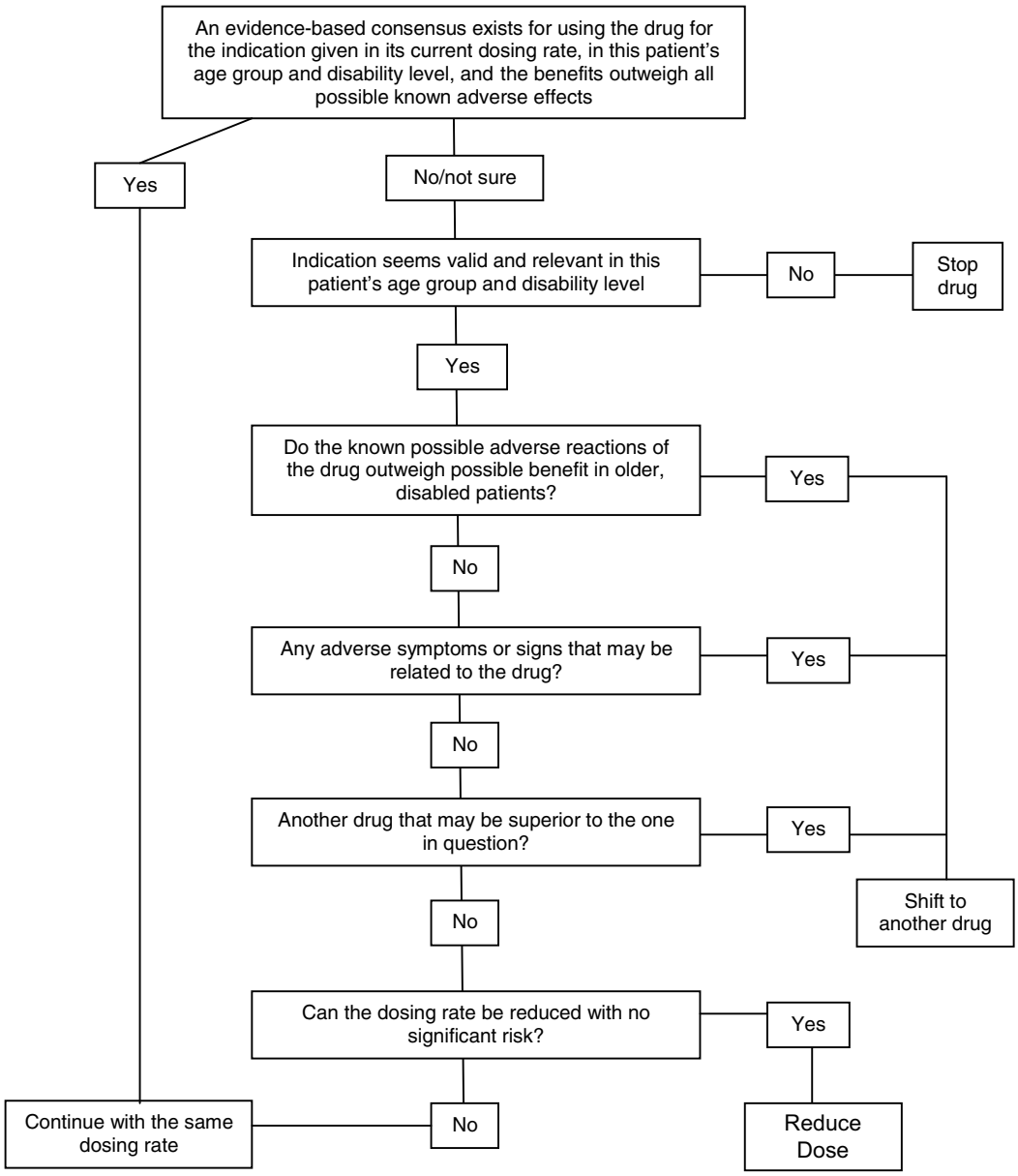
Reprinted with permission from Saag KG, Teng GG, Patkar NM, Anuntiyo J, Finney C, Curtis JR, et al. American College of Rheumatology 2008 recommendations for the use of nonbiologic and biologic disease-modifying antirheumatic drugs in rheumatoid arthritis. Arthritis Rheum 2008;59:762–84. Available at *www.rheumatology.org/publications/guidelines/recommendations.asp?aud=mem*. Accessed May 11, 2009.

Algorithm for the management of metabolic syndrome



[a]Refer to Table 1-2.
AHA/NHLBI = American Heart Association/National Heart, Lung and Blood Institute; ASCVD = atherosclerotic cardiovascular disease; HDL-C = high-density lipoprotein cholesterol; IDF = International Diabetes Federation.

An algorithm for improving drug therapy in disabled or frail elderly patients



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