

CLINICAL GUIDELINE:

POTENTIALLY AVOIDABLE CHRONIC CONDITIONS

Ischemic Heart Disease



Physician Clinical Integration
Network, LLC

Scope

Cardiovascular disease is the leading cause of death, accounting for 17.3 million per year globally. Direct and indirect costs of cardiovascular disease and stroke total more than \$320.1 billion including health expenditures and lost productivity. With cardiovascular disease affecting 85.6 million Americans, it is important to manage ischemic heart disease (ISHD) to promote patient health and quality of life [1].

Guidance

The PCIN Quality Committee and its designees reviewed the available information in the medical literature and societal guidelines on the evaluation and management of ISHD, as well as information derived from their clinical practice to devise these guidelines.

These recommendations were developed based on the 2012 guideline for the Diagnosis and Management of Patients with Stable Ischemic Heart Disease, the 2014 Update Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, the American College of Physicians, American Association for Thoracic Surgery, Preventive Cardiovascular Nurses Association, Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons.

Population Included

Patients in the ambulatory setting with a diagnosis of ischemic heart disease (ISHD)

Exclusions

Pregnant females

Recommendations

Lifestyle Modifications

Physical Activity

- Assess for associated risk with exercise
- Encourage moderate intensity aerobic activity for at least 30 minutes, five days a week
- Recommend medically-supervised cardiac rehabilitation program for individuals with recent ischemic events or revascularization

Weight Management

- Assess body mass index (BMI) with a goal between 18.5 - 24.9 kg/ m²
- Encourage weight maintenance/reduction through physical activity and caloric intake
- Initial weight-loss goal should be a decrease in body weight by 5-10% from baseline within six months

Smoking Cessation

- Assess all patients for tobacco use
- Encourage smoking cessation and avoidance of exposure to environmental tobacco smoke

Nutrition

- Diet should emphasize intake of fruits, vegetables, whole grain, poultry, fish, legumes, nuts and limit intake of sodium, sweets and red meats.

Management of Modifiable Risk Factors

Blood Pressure (BP) Control

- Goal for most individuals with ISHD is <140/90 mmhg
- For individuals not at target, initiate lifestyle modifications and add medication for BP management

Lipid Management

- Baseline and annual lipid profile is recommended
- Encourage lifestyle modifications
- For patients with ISHD the following is recommended for statin therapy:
 - < 75 years with no safety concerns should receive high-intensity statin
 - > 75 years with safety concerns should receive moderate-intensity statin

Diabetes Management

- Patients with ISHD and diabetes need aggressive control of other coronary artery disease (CAD) risk factors
- Treat to appropriate glycemic targets

Depression Screening

- The standard PHQ-2 and/or PHQ-9 depression screening tool (Figure 2, 3) should be utilized.
- A PHQ-2 score ≥ 3 should be further evaluated with the PHQ-9 to determine whether they meet criteria for a depressive disorder.

Medication Therapy

Antiplatelet Agents and Anticoagulants

- Prescribe Aspirin, 81 mg daily, unless contraindicated
- Treatment with clopidogrel 75 mg daily is reasonable when Aspirin is contraindicated

Beta-blockers (B-blocker)

- Start and continue oral beta-blocker therapy for three years in all patients with normal left ventricular (LV) function after myocardial infarction (MI) or acute coronary syndrome (ACS).
- Beta-blocker therapy should be used in all patients with LV systolic function (ejection fraction [EF] $\leq 40\%$) with heart failure or prior MI, unless contraindicated.
- Beta-blockers can be considered as chronic therapy for all patients with coronary disease.

Renin-Angiotensin-Aldosterone System Blockers

- Prescribe an angiotensin-converting enzyme (ACE) inhibitor unless contraindicated for all patients with ISHD who also have:
 - Hypertension; or
 - Diabetes mellitus; or
 - Left ventricular ejection fraction (LVEF) $\leq 40\%$; or
 - Chronic kidney disease.
- An angiotensin receptor blocker (ARB) is indicated for individuals intolerant of an ACE inhibitor.

Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

- NSAIDs should be discontinued if feasible, except Aspirin, due to increased risk of cardiovascular events.

Immunizations

- Annual influenza vaccinations are recommended.
- Pneumococcal vaccination should be administered according to CDC guidelines.

Medical Therapy for Relief of Symptoms in Patients with Stable ISHD

- B-blocker prescription can be utilized for symptom relief with dose titration to a resting heart rate of 55 to 60 bpm.
- Calcium channel blockers and long-acting nitrates can be prescribed when beta-blockers are ineffective.
- Short-acting nitrates should be used for immediate angina relief.



Invasive Testing

- Coronary angiography is useful in patients with presumed ISHD who have unacceptable ischemic symptoms despite guideline-directed medical therapy (GDMT) and for coronary revascularization candidates.
- Coronary angiography is reasonable to define the extent and severity of CAD in patients with suspected ISHD whose clinical characteristics and results of noninvasive testing (exclusive of stress testing) indicate a high likelihood of severe ISHD and for coronary revascularization candidates.
- Coronary angiography is reasonable in patients with suspected symptomatic ISHD who cannot undergo diagnostic stress testing or have indeterminate or non-diagnostic stress tests when there is a high likelihood the findings will result in important changes to therapy.
- Coronary angiography might be considered in patients with stress test results of acceptable quality that do not suggest the presence of CAD, but when clinical suspicion of CAD remains high, and there is a high likelihood the findings will result in important changes to therapy [12].

Rationale

Evidence Supporting Recommendations

Patients with ISHD should receive intensive secondary prevention interventions to reduce risk for subsequent events and mortality. This guideline focuses specifically on secondary prevention measures which should be initiated in the ambulatory setting after diagnosis of ISHD. These measures focus on lifestyle modifications, medication management, and lifestyle changes with medication management. This guideline is not meant to aid providers in the screening, diagnosis, or management during an acute ischemic event. Figure 1 depicts guideline-directed medical therapy for patients with stable ISHD.

Lifestyle Modifications

Before initiating an exercise regimen, providers need to assess individual risk with physical activity history or an exercise test, when indicated. Recommendations should be tailored to the patient's physical status, limitations, and prognosis. Current recommendations encourage 30 minutes of moderate-intensity exercise five days a week. At-risk patients should be part of a medically-supervised, physician-driven exercise program [2]. Patient BMI assessment should occur at every visit. Goals for weight reduction should focus on reducing body weight by 5-10% from baseline over a six-month period which corresponds to a 40-1,000 kilocalorie per day diet reduction. Studies have shown a correlation between an increased BMI and ischemic cardiac events, although there is no proven reduction in cardiac event rates if weight loss is achieved [2]. Diet should emphasize intake of fruits, vegetables and whole grain; include low-fat dairy products, poultry, fish, legumes, nuts, non-tropical vegetable oils and limit intake of sodium, sweets, sugar sweetened beverages and red meats [3]. Alcohol consumption should be limited to two drinks per day for men and one drink per day for women [2]. All patients should be assessed for tobacco use and advised to quit. Assistance for patients via a tobacco treatment program or pharmacologic treatment can be provided [2].

Management of Modifiable Risk Factors

Risk factors for ISHD need to be modified to prevent subsequent vascular events. Individuals with ISHD should have a BP goal of <140/90 mmHg [2,4]. A goal BP of <150/90 may be considered in patients ≥80 years of age [4]. A lower BP <130/80 may be appropriate for some ISHD patients. This may include patients with previous MI, stroke, transient ischemic attack (TIA) or CAD risk equivalents (carotid artery disease, peripheral artery disease [PAD], abdominal aortic aneurysm) [4]. Patients with diabetes or chronic kidney disease should have a goal BP <140/90 irrespective of age [5,6].

Secondary prevention with high-intensity statin therapy should occur in populations with established clinical atherosclerotic cardiovascular disease (ASCVD) who are ≤75 years of age with no safety concerns. Moderate-intensity statin should be utilized in populations who are >75 years of age or with safety concerns [7]. Patient characteristics that may influence their safety on statins include: impaired renal or hepatic function; history of previous statin intolerance; muscle disorders; and concomitant use of drugs affecting statin metabolism. Use of potentially teratogenic drugs (such as statins) in women of childbearing age requires a discussion about the potential risks of the drug in pregnancy as well as the potential benefits for the patient's condition. In patients who are completely statin intolerant, additional LDL lowering can be achieved with bile acid sequestrants or niacin. Adherence to statin therapy and lifestyle modifications should be addressed before any medication changes are made [7]. Please refer to PCIN's guideline *Evaluation and Management of Hyperlipidemia in the Ambulatory Care Setting* for further recommendations.



Patients with ISHD and diabetes need aggressive control of other CAD risk factors to reduce risk of subsequent events and mortality [2]. Patients with ISHD and diabetes should be treated to appropriate glycemic targets [2.5.8]. Please reference PCIN's guideline *Evaluation and Management of Diabetes in the Ambulatory Care Setting* for further recommendations.

ISHD patients with depression experience physical limitations, increased episodes of angina, and lower perceived quality of life. Treatment of depression improves depressive symptoms but has not been proven as a benefit in reducing cardiovascular events [2]. Providers should screen ISHD patients for depression using, for example, Patient Health Questionnaire 2 (PHQ-2 and/or PHQ-9). A positive response to either item on this questionnaire should prompt a referral for a more comprehensive evaluation [2, 13, 14].

Medication Therapy

For patients with established ISHD antiplatelet therapy, initiate or continue with Aspirin, 81 mg daily, indefinitely. Clopidogrel may be substituted if Aspirin is contraindicated [2]. Beta-blocker therapy should be used in all patients with LV systolic function (EF <40%) with heart failure or prior MI unless contraindicated. In this patient subset, beta-blockers that have been demonstrated to reduce mortality (carvedilol, metoprolol succinate, or bisoprolol) are recommended. Beta-blocker therapy should be started and continued for three years in all patients with normal LV function after MI or ACS. Research suggests the use of beta-blockers in ISHD patients with normal LV function for three years after MI or ACS; however, beta-blockers can be considered for chronic long-term therapy in all patients with CAD [2, 9]. ACE inhibitors are recommended for all patients with ISHD who also have hypertension, diabetes mellitus, LVEF \leq 40%, or chronic kidney disease. ARBs are indicated for all patients who are intolerant to ACE inhibitors [2]. Use of potentially teratogenic drugs (such as ACE inhibitors, ARBs) in women of childbearing age requires a discussion about the potential risks of the drug in pregnancy as well as the potential benefits of the drug for the patient's condition. NSAIDs should be discontinued if feasible, except Aspirin, because of an increased risk of cardiovascular events. Initial analgesia in patients with ISHD could consist of Aspirin or acetaminophen. If NSAID utilization cannot be avoided, naproxen is preferred to other NSAIDs [10, 11]. An annual influenza vaccination is strongly recommended. The pneumococcal vaccination should be administered upon ISHD diagnosis [2]. In individuals with angina, beta-blocker therapy can be prescribed for relief of symptoms. Beta-blocker therapy should be titrated to a resting heart rate of 55 to 60 beats per minute. Calcium channel blockers or long-acting nitrates can be added when beta-blockers are ineffective for symptom relief [2]. Sublingual nitroglycerin or nitroglycerin spray should be used for immediate angina relief.

Attachments

The reference guide attached provides a quick summary of the approach to this guideline (Figure 1).



References

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Appendix

Figure 1: Guideline-Directed Medical Therapy for Patients with SIHD

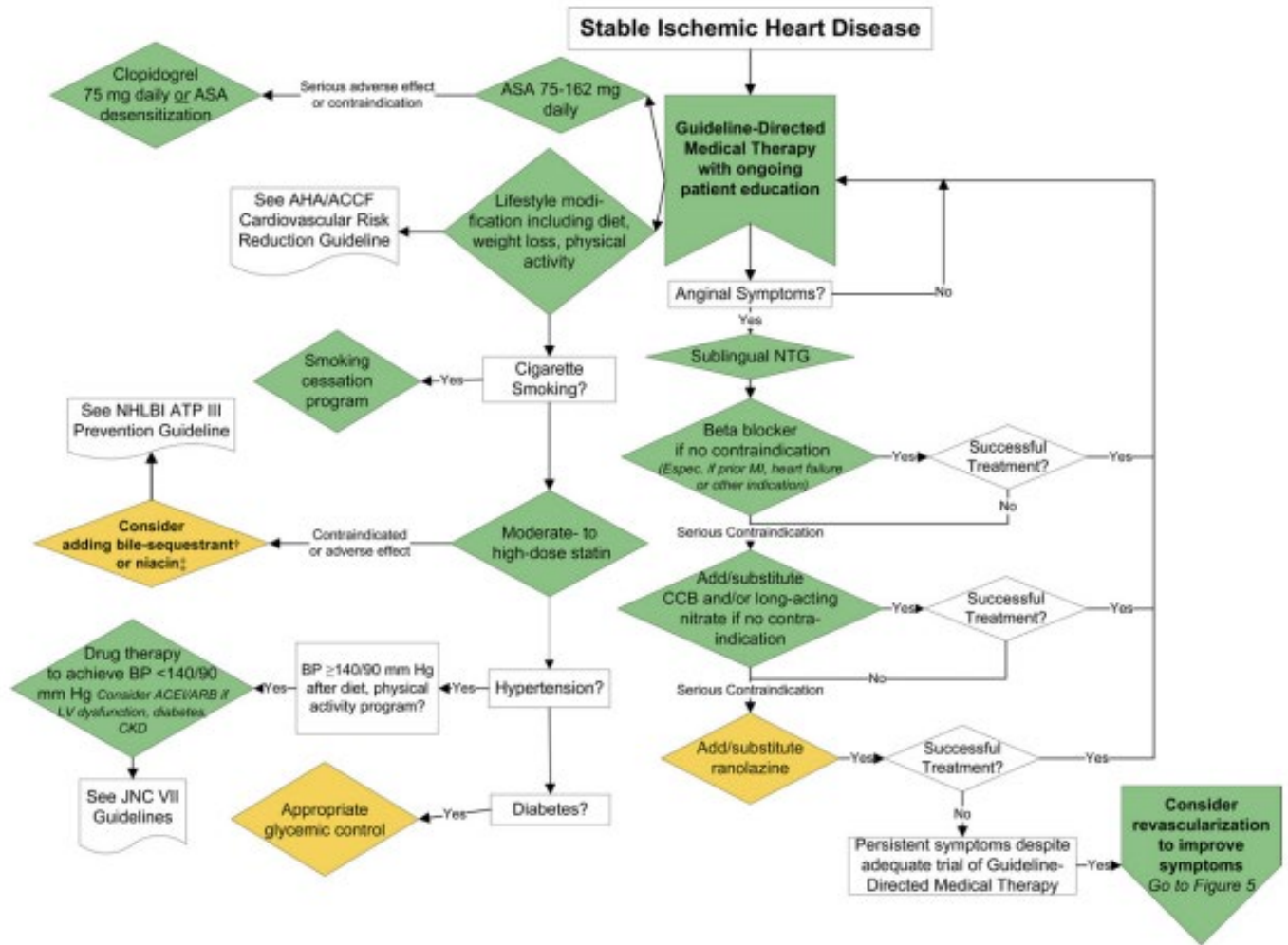


Figure 4. Algorithm for Guideline-Directed Medical Therapy for Patients With SIHD*

*Colors correspond to the class of recommendations in the ACCF/AHA Table 1. The algorithms do not represent a comprehensive list of recommendations (see text for all recommendations). †The use of bile acid sequestrant is relatively contraindicated when triglycerides are ≥ 200 mg/dL and is contraindicated when triglycerides are ≥ 500 mg/dL. ‡Dietary supplement niacin must not be used as a substitute for prescription niacin. ACCF indicates American College of Cardiology Foundation; ACEI, angiotensin-converting enzyme inhibitor; AHA, American Heart Association; ARB, angiotensin-receptor blocker; ASA, aspirin, ATP III, Adult Treatment Panel 3; BP, blood pressure; CCB, calcium channel blocker; CKD, chronic kidney disease; HDL-C, high-density lipoprotein cholesterol; JNC VII, Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure; LDL-C, low-density lipoprotein cholesterol; LV, left ventricular; MI, myocardial infarction; NHLBI, National Heart, Lung, and Blood Institute; and NTG, nitroglycerin.

Fihn, S. D., Gardin, J. M., Abrams, J., Berra, K., Blankenship, J. C., Dallas, A. P.,...Williams, S. V. (2012). 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and management of patients with stable ischemic heart disease. *Circulation*, 126, 1-118. doi: 10.1161/CIR.b013e318277d6a0

Figure 2: PHQ-2 Depression Questionnaire

PHQ-2 QUESTIONNAIRE				
Over the past 2 weeks, how often have you been bothered by any of the following problems:	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3

Probability of Major Depressive Disorder:

- 1 15.4%
- 2 21.1%
- 3 38.4%
- 4 45.5%
- 5 56.4%
- 6 78.6%

Pfizer Inc. The Patient Health Questionnaire-2 (PHQ-2). Stable Resource Toolkit. Retrieved from: http://www.cqaimh.org/pdf/tool_phq2.pdf

Figure 3: PHQ-9 Depression Questionnaire

PATIENT HEALTH QUESTIONNAIRE - PHQ-9
Nine Symptom Depression Checklist

Patient Name: _____ Date: _____

1. Over the last 2 weeks, how often have you been bothered by any of the following problems?

<i>Not at all</i>	<i>Several days</i>	<i>More than half the days</i>	<i>Nearly every day</i>
<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>

- a. Little interest or pleasure in doing things
- b. Feeling down, depressed, or hopeless
- c. Trouble falling/staying asleep, sleeping too much
- d. Feeling tired or having little energy
- e. Poor appetite or overeating
- f. Feeling bad about yourself – or that you are a failure or have let yourself or your family down
- g. Trouble concentrating on things, such as reading the newspaper or watching television
- h. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual
- i. Thoughts that you would be better off dead or of hurting yourself in some way

2. If you checked off any problem on this questionnaire so far, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult at all Somewhat Difficult Very Difficult Extremely Difficult

Total # Symptoms: _____ **Total Score:** _____

The John D. & Catherine T. MacArthur Foundation’s Initiative on Depression & Primary Care and 3CM, LLC. Depression Management Tool Kit. The MacArthur Initiative on Depression & Primary Care. 2009. Retrieved from: https://www.integration.samhsa.gov/clinical-practice/macarthur_depression_toolkit.pdf

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