

EVALUATION PEARLS

CRITERIA FOR ABNORMAL EKGS

EKGs are now read by automated computer algorithms and overread by cardiologists or primary care physicians. Computer readings are wrong 20-25% of the time. Computer-read EKGs should be overread and signed off by a physician before referral is triggered.

EKG abnormalities not in need of referral:

- RBBB
- LAFB
- LPFB
- First degree AV block
- Non-specific ST-T abnormalities
- LVH with repolarization abnormalities
- Normal early repolarization abnormality
- Poor R wave progression
- PACs or PVCs
- Second degree type I AV block with no symptoms

EKG abnormalities justifying referral or further testing:

- Diagnostic Q waves (abnormal)
- LBBB
- High degree AV block
- Corrected QT greater than 500msec in patients without RBBB or LBBB.
- Atrial flutter or fibrillation if a new finding.

Any EKG in the “grey zone” should be faxed to referral department at 605-755-0603 for review by the office call cardiologist who will make a recommendation for further testing and/or consultation.

GUIDELINES FOR DIZZINESS/LIGHTHEADEDNESS

The cause of the patient's dizziness is almost always found in the History and Physical:

- Is it associated with a change in the patient's posture or head position?
- Is it associated with the time of taking vasoactive medicines?
- Is it triggered by exercise?
- Are relieving maneuvers or "avoidance" behaviors by the patient effective?
- Are symptoms associated with loss of consciousness?
- Carefully review the med list.
- Differentiate between vertigo and dizziness. Always think of potential neurologic and otologic causes.
- Are there any symptoms compatible with a cardiac tachy or brady arrhythmia?
- **Always check orthostatic vital signs with standing BP and pulse at 1 and 3 minutes.**
- Check blood pressures in both arms.
- Listen for carotid bruits.
- Is there a harsh, obstructive murmur?
- If there is history of recurrent syncope with suspicion for vasovagal/neurocardiogenic syncope, consider Tilt Table testing

Testing should be streamlined based on your differential diagnosis gleaned from the patient evaluation. Some examples:

- Carotid Doppler in patients with carotid bruits
- Carotid and subclavian Dopplers in patients with dizziness and unequal arm pressures
- Cardiac monitor in patients with a suspected brady or tachyarrhythmia
- Echo/Doppler in patients with harsh, obstructive sounding murmurs

Referral to Cardiology is rarely necessary for patients with dizziness. We should see patients with:

- Severe orthostatic hypotension or syncope where med changes don't solve the problem.
- Severe or critical carotid or vertebral arterial occlusive disease.
- Patients with subclavian steal syndrome.
- Patients with brady or tachy arrhythmias triggering their dizziness.
- Patients with significant aortic stenosis, CAD, cardiomyopathy etc.

(This list is not meant to be comprehensive)

GUIDELINES FOR PALPITATIONS

Initial evaluation prior to referral:

- Thorough history including caffeine use, alcohol use, energy drink use, decongestant use, street drug use, level of stress in patient's life, hx of sleep apnea, etc.
- 12 lead EKG
- Echo if patient has a murmur, abnormal EKG, or signs and symptoms of CHF
- Cardiac monitoring:
 - 24-hour or 48-hour Holter monitor in those with daily or frequent symptoms,* or
 - 30-day event monitor for those with less frequent symptoms,* or
 - 7 or 14-day mobile cardiac telemetry monitor (MCT -also known as ECAT) for continuous monitoring of the patient's rhythm. Useful if you suspect A fib, A flutter, SVT, or VT.
Note: *Commercial insurance carriers usually will not cover 7 or 14 day MCT monitors. Check before ordering. No problem in Medicare beneficiaries.*
 - *Patient must be capable of pressing an event button on the monitor and making diary entries.

When contemplating referral after the test results are back:

- Cardiology usually does not need to see patients with "rare," "occasional," or infrequent PACs and PVCs. Consider managing these patients with lifestyle changes or a low dose cardio-selective beta blocker such as metoprolol succinate or atenolol.
- Refer patients with A fib, A flutter, SVT, PAT, runs of non-sustained VT or those with sustained VT.
- High degree AV block can also cause patients to feel palpitations. They should be referred.

PRE-OP CARDIAC EVALUATION PRIOR TO NON-CARDIAC SURGERY

1. Data required prior to evaluation:

- a. Complete H&P by primary or referring physician
- b. Pertinent cardiac records
- c. EKG in patients with coronary artery disease (CAD) or structural heart disease
- d. Echo in patients with dyspnea of unknown origin or patients with stable congestive heart failure (CHF) with worsening dyspnea, or CHF patients with echo older than 1 year

2. Low Risk Procedures That Do Not Need Pre-Op Cardiac Clearance*:

- a. Endoscopic procedures
- b. Cataract surgery
- c. Dental procedures
- d. Breast surgery
- e. Plastic surgery
- f. Dermatologic surgery

***Caveat:** patients with asymptomatic, stable or controlled atrial arrhythmia; and controlled atrial fibrillation, do NOT need pre-op cardiac evaluation

3. Active Conditions That Require Pre-Op Cardiac Evaluation:

- a. Unstable angina
- b. Decompensated CHF
- c. Worsening or new onset CHF
- d. Symptomatic arrhythmias
- e. Severe valvular heart disease
- f. Functional capacity less than 4 METS
- g. Recent myocardial infarction (MI) (7 - 30 days)

4. High-Risk Non-Cardiac Surgical Procedures (>5%):

- a. Aortic and other major vascular procedures
- b. Peripheral vascular disease
- c. Anticipated, prolonged surgical procedures >2 hours

5. Intermediate-Risk Procedures (<5%):

- a. Carotid endarterectomy
- b. Head and neck surgery
- c. Intra-peritoneal or intra-thoracic surgery
- d. Orthopedic surgery
- e. Prostate surgery

6. Pre-Op Stress Testing: Reserved for patients with intermediate predictors*:

- a. Mild angina pectoris (CCS, Class 1 and 2)
- b. Prior MI
- c. Compensated or prior CHF
- d. Diabetes mellitus who are undergoing intermediate or high risk procedures

***Caveat 1:** patients with previous coronary revascularization in the past five years who are clinically stable, do NOT need pre-op stress testing

***Caveat 2:** if the patient has undergone ischemic testing in the past two years, and the findings were favorable, repeat testing is not necessary

PROSTHETIC HEART VALVE FOLLOW UP (ACC/AHA GUIDELINES 2014):

- The asymptomatic uncomplicated patient is usually seen at one-year intervals for a cardiac history and physical examination.
- An initial TTE study is recommended in patients after prosthetic valve implantation for evaluation of valve hemodynamics (ACC Level of recommendation: I, B).
- Repeat TTE is recommended in patients with prosthetic heart valves if there is a change in clinical symptoms or signs suggesting valve dysfunction (ACC Level of recommendation: I, C).
- Annual TTE is reasonable in patients with a bioprosthetic valve after the first 10 years, even in the absence of a change in clinical status (ACC Level of recommendation: IIa, C).
- Earlier evaluation may also be prudent in selected patients at increased risk of early bioprosthetic valve degeneration, including those with renal impairment, diabetes mellitus, abnormal calcium metabolism, systemic inflammatory disease and in patients less than 60 years of age.
- In patients with mechanical valve prostheses, routine annual echocardiographic evaluation is not needed if the postoperative baseline study is normal in the absence of signs or symptoms of valve dysfunction.

Reference: 2014 American Heart Association/American College of Cardiology Guideline for the Management of Patients With Valvular Heart Disease. JACC Vol 63, No.22, June 10, 2014

Appropriate use criteria for echo follow up of valvular heart disease and prosthetic valves:

Appropriate use score (1-3 inappropriate, 4-6 uncertain, 7-9 appropriate)

Native Valvular Stenosis With TTE

- Routine surveillance (three or more years) of mild valvular stenosis without a change in clinical status or cardiac exam: Appropriate (7)
- Routine surveillance (one or more years) of moderate or severe valvular stenosis without a change in clinical status or cardiac exam: Appropriate (8)

Native Valvular Regurgitation With TTE

- Routine surveillance (one or more years) of moderate or severe valvular regurgitation without change in clinical status or cardiac exam: Appropriate (8)

Prosthetic Valves With TTE

- Initial postoperative evaluation of prosthetic valve for establishment of baseline: Appropriate (9)
- Routine surveillance (three or more years after valve implantation) of prosthetic valve if no known or suspected valve dysfunction: Appropriate (7)
- Evaluation of prosthetic valve with suspected dysfunction or a change in clinical status or cardiac exam: Appropriate (9)
- Re-evaluation of known prosthetic valve dysfunction when it would change management or guide therapy: Appropriate (9)

Reference: 2011 Appropriate Use Criteria for Echocardiography, JASE, March 2011



Diagnostic Testing Order - Heart and Vascular Institute

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Patient Last Name: _____

First Name: _____ MI: _____

Gender: Female Male

Date of Birth: _____

Patient Information

TODAY'S DATE	WEIGHT	PRIMARY INSURANCE CARRIER / DEMOGRAPHICS		
MAILING ADDRESS		CITY	STATE	ZIP
HOME PHONE NUMBER		ALTERNATE PHONE NUMBER: <input type="checkbox"/> Work <input type="checkbox"/> Cell Other: _____		
ORDERING PROVIDER	ORDERING PROVIDER'S PHONE	PERFORM TEST WITHIN Days: _____ Weeks: _____ Months: _____		

Complete the indication on the line next to selected test(s) below.

Nuclear Medicine Myocardial Perfusion Imaging: (78452)

Recommend recent echocardiogram prior to test

Treadmill Diagnosis / Reason for Test: _____

Pharmacological* Diagnosis / Reason for Test: _____

(*select one) Lexiscan Dobutamine

Pre-Authorization Number: _____

Stress Echo: (93351) Diagnosis / Reason for Test: _____

Treadmill

Dobutamine

Pre Authorization Number: _____

Exercise Only Stress Test: (93015)

Diagnosis / Reason for Test: _____

Tile Table Test: (93660) Diagnosis / Reason for Test: _____

Need documented orthostatic vs and recent echocardiogram

Echocardiogram: (93306) Diagnosis / Reason for Test: _____

Carotid Ultrasound: (93880) Diagnosis / Reason for Test: _____

Other Test: _____ Diagnosis / Reason for Test: _____

Holter Monitor: 24 Hour 48 Hour

Office Visit Needed

Pre Authorization Number: _____

Ordering Provider Name PRINT: _____

Ordering Provider Signature: _____ Date: _____ Time: _____

Please fax patient records to (605) 755-0604, including: EKG, office notes, any pertinent lab work or previous cardiac testing, a current medication list and this form.



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