GUIDELINES & PROTOCOLS

ADVISORY COMMITTEE

Ambulatory ECG Monitoring (Holter Monitor and Patient-Activated Event Recorder)

Effective Date: July 1, 2004

Scope

This guideline applies to the use of ambulatory ECG monitors for patients aged 13 years and older. It reflects changing technology and appropriate application of Holter monitors and patient-activated event recorders (loop recorders).

RECOMMENDATION 1: Patients suitable for ambulatory ECG monitoring

Ambulatory ECG monitoring is suitable for patients with symptoms which may be caused by arrhythmia, such as palpitations, light-headedness or syncope. Patients should be able to record symptoms in a diary or have symptoms recorded for them.

RECOMMENDATION 2: Choice of ambulatory ECG monitor

Patients with symptoms occurring daily or almost daily or those who have syncope without warning may be evaluated with a 24-hour Holter monitor. Patients with symptoms occurring less frequently may be better evaluated using a patient-activated event recorder.

RECOMMENDATION 3: Ambulatory ECG monitoring for complex cardiac conditions

Ambulatory ECG monitoring is often useful in more complex cardiac conditions. Selection of patients and choice of ambulatory monitor are best discussed with a specialist/cardiologist. The following categories of patients may benefit from ambulatory ECG monitoring:

- Patients with clinical suspicion of pacemaker malfunction when this cannot be determined by routine ECG and analysis by the manufacturer's programmer.
- Patients with frequent, reproducible cardiac arrhythmias who are using antiarrhythmic drugs and who need to undergo serial monitoring to assess response or adverse reactions to drug therapy.
- Patients being assessed for trends in heart rate, e.g., drug therapy in atrial fibrillation, relative bradycardia.

RECOMMENDATION 4: Patients not recommended for ambulatory ECG monitoring

The following categories of patients are not recommended for ambulatory ECG monitoring:

- Patients with organic heart disease who are at immediate risk of life threatening arrhythmia, injury, or sudden death, or patients with arrhythmias causing ischemic chest pain, pulmonary edema, etc. These patients require emergency assessment.
- Patients with symptoms such as chest pain which may be due solely to coronary artery disease. Other investigations such as stress testing are more reliable for diagnosing coronary artery disease.
- Asymptomatic patients with recent myocardial infarction.

Rationale

The strengths of 24-hour Holter monitoring include its simplicity and the lack of need for patient activation. The continuous monitoring allows capture of asymptomatic arrhythmias or arrhythmias associated with loss of consciousness as well as documentation of circadian variation in arrhythmia occurrence. However, the continuous recording and saving of data limit the period of monitoring to a very short window that is often inadequate to diagnose the cause of symptoms.

A major strength of patient-activated event recorders (loop recorders) is the extended duration of possible monitoring compared with Holter monitors. These devices are routinely carried or worn for up to two weeks depending on the indication. Another advantage is the high degree of specificity achieved by requiring the patient to activate the monitor at the time of perceived symptoms.

Ambulatory electrocardiography can detect atrial fibrillation not found on the initial electrocardiogram in 1% to 5.4% of people with stroke. There is insufficient evidence to recommend for or against the use of ambulatory ECG for the detection of paroxysmal atrial fibrillation in this setting.

Because the role of treatment of ventricular ectopy for mortality reduction post-MI is still unclear, the use of Holter monitoring for routine risk stratification post-MI is not recommended at this time.

References

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Sponsors

This guideline, revised by the Guidelines and Protocols Advisory Committee, supersedes the guideline *Ambulatory ECG Monitoring (Holter Monitor and Patient-Activated Event Recorder Monitor)* revised in 2001. The revision was approved by the British Columbia Medical Association and adopted by the Medical Services Commission. Funding for this guideline was provided in full or part through the Primary Health Care Transition Fund.

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This guideline is based on scientific evidence current as of the effective date.

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