Multidisciplinary Management of Cryptogenic Stroke Patients

Developing a robust post-acute plan to determine the underlying cause of cryptogenic stroke

THE CRYPTOGENIC STROKE PATIENT POPULATION

Strokes may be considered cryptogenic when no etiology is found after a complete work up. Cryptogenic, or unexplained, stroke accounts for about 30% of ischemic strokes. Often, cryptogenic stroke is simply a diagnosis of exclusion.

Thus, clearly defining the etiology of stroke has profound implications for subsequent treatment and — more importantly — for reducing the risk of recurrent events.

Potential causes of cryptogenic strokes include:

1. Cardiac embolism secondary to occult paroxysmal atrial fibrillation (AF)
2. Paradoxical embolism secondary to patent foramen ovale
3. Atrial septal abnormalities
4. Thrombophilia (including hypercoagulable states)
5. Antiphospholipid antibodies or cancer-associated hypercoagulability
6. Non-bacterial endocarditis
At present, most cryptogenic stroke patients receive antiplatelet medications together with intensive stroke-risk-factor modification. It is estimated from current studies that one-fifth to one-third of these patients have paroxysmal AF and are at risk for cardioembolic stroke, regardless of the etiology of their first stroke. Such patients may be better served by treatment with an anticoagulant.

Establishing the cause of stroke through a full stroke workup and developing a coordinated plan can ensure a proper assessment of the cause the stroke and apply appropriate follow-up at discharge. **This document will provide a guide on how your facility may approach this difficult patient population.**
As cryptogenic stroke is a diagnosis of exclusion, it would be expected that the percentage of strokes classified as cryptogenic will diminish as additional diagnostic testing is completed. It is clear that the diagnosis of cryptogenic stroke can be variable depending on the healthcare facility, available diagnostic modalities and physician experience.

### Diagnosis of the Cause of a Cryptogenic Stroke

#### Standard Workup

*According to the 2013 Acute Ischemic Guidelines, baseline evaluations, at a minimum, should include:*

1. Non-contrast brain CT or brain MRI
2. Blood glucose
3. Oxygen saturation
4. Serum electrolytes/renal function tests
5. Complete blood count, including platelet count
6. Markers of cardiac ischemia
7. Prothrombin time/International Normalized Ratio (INR)
8. Activated partial thromboplastin time
9. Electrocardiogram

#### Advanced Testing to Determine Cause

1. 24 hours or more of ECG monitoring
2. Transthoracic or transesophageal echocardiography
3. Vascular imaging of the head and neck including:
   - Magnetic resonance angiography (MRA)
   - Computed tomographic angiography (CTA)

* Ultrasoundography of eight cervical arteries and transcranial Doppler ultrasoundography of intracranial vessels, in place of MRA or CTA (allowed for patients older than 55 years of age)*
MANAGING CRYPTOGENIC STROKE PATIENTS AT YOUR FACILITY

Determine how your facility can reach the cryptogenic stroke patient population and then ensure that an adequate work-up plan is completed.

First, identify champions and key stakeholders for your stroke multidisciplinary care team. This should include a neurologist, vascular neurologist or neurohospitalist, cardiologist, stroke coordinators, therapists and other care team members. Also consider how the patient’s primary care physician will be engaged in the patient’s management team at discharge.

**Considerations:**

- Determine how your facility should address this patient population.
- Decide which members of the team are needed to support the approach.
- Communicate the plan to a prioritized list of healthcare providers in the hospital community (PCPs, cardiologists and neurologists).
- Continue to assess and reevaluate implementation.
MULTIDISCIPLINARY TEAM MEMBERS INVOLVED IN THE CARE OF THE PATIENT

- neurology
- stroke coordinators
- administration
- hospitals
- nurses
- electrophysiology
- cardiology

CRYPTOGENIC STROKE PATIENT
Foundational Considerations
- Who will champion this effort?
- What is the transition of care and follow-up plan in place for the cryptogenic stroke patient?

Execution of the Plan
- Do you have the infrastructure and staff in place to support the implementation?

Metrics
- Do all the cryptogenic stroke patients in your facility get the standard workup?
- How is cryptogenic stroke care tracked?

For more information about cryptogenic stroke, visit StrokeAssociation.org/CS