



## **The Diagnosis and Management of ED Patients with Intracerebral Hemorrhage**

### **Learning Objectives**

- Review the optimal way in which the clinical evaluation, diagnostic testing, and treatment of Emergency Department patients with acute stroke symptoms and suspected ICH can be managed.
- Discuss procedures and protocols that will assist the emergency physician in providing care to these critically ill and injured patients.

### **Background**

One of the critical requirements of the emergency physician is to be able to efficiently diagnose and effectively treat patients who present to the Emergency Department with acute stroke symptoms and suspected ICH. This lecture will highlight two specific skill areas that are part of this overall treatment strategy. The first includes the physical exam and diagnostic evaluation of these patients, including calculation of hemorrhage volume using CT neuroimaging, as well as predicting outcome in ICH using hemorrhage volume and the GCS score. The latter involves the use of a protocol that includes steroids, anti-epileptic drugs, pain and nausea medications, and therapies designed to limit hemorrhage in the subset of ICH patients who are anti-coagulated and who may have an elevated INR.

In this Brain Injury Course, FERNE would like to stress the use of specific procedures and protocols in managing patients with neurological illness and injury. In effect, the goal is to take a surgeon's approach to treating medical problems in the Emergency Department, including complications related to ICH.

### **Key Clinical Questions**

- What are the clinical signs and symptoms in patients with cephalgia and suspected ICH?
- How should patients with cephalgia and suspected ICH be evaluated and managed?
- What are the roles for the following therapies in the setting of ICH and anti-coagulation: steroids, anti-epileptic drugs, pain and nausea medications, and therapies designed to limit ongoing hemorrhage?

### **Featured Procedures or Protocols**

- Diagnostic protocol utilizing calculation of hemorrhage volume using CT neuroimaging, as well as predicting outcome in ICH using hemorrhage volume and the GCS score.
- Treatment protocol for the management of ICH in the setting of anti-coagulation, including the use of steroids, anti-epileptic drugs, pain and nausea medications, and therapies designed to limit hemorrhage.

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