



## EMA 2007 Advanced Emergency and Acute Care Medicine Conference

# “Optimal Blood Pressure Management in Emergency Department Patients with Hypertensive Emergencies and Stroke Syndromes”

### Learning Objectives

- Determine the definition of hypertensive emergencies, and discuss their epidemiology and pathophysiology in ED patients with stroke syndromes.
- Identify what therapies are available for the treatment of ED patients with hypertensive emergencies and stroke syndromes.
- Discuss the clinically relevant endpoints for the evaluation and management of ED patients with hypertensive emergencies.
- Understand what guidelines and recommendations assist emergency care providers in optimally treating ED patients with hypertensive emergencies and stroke syndromes.

### Background

Hypertensive emergency patients are commonly treated in the Emergency Department. This emergent situation is frequently manifested as a co-morbid disease in acute stroke, altered mental status, coma, and intracerebral hemorrhage. This program will investigate the rationale for blood pressure management and treatment options available for ED patients who present in a hypertensive emergency and related stroke syndromes.

Upon leaving this symposium, emergency practitioners should be able to better understand the epidemiology and pathophysiology of patients with hypertensive emergencies and stroke syndromes. Additionally, they should also know how to optimally manage the hypertensive emergencies and stroke syndromes based on the current guidelines that govern their use.

### Case Presentation

A 64 year old male patient with a history of hypertension and diabetes presents to the Emergency Department with a new onset of ipsilateral right-sided facial droop, arm and leg weakness, aphasia, and gaze to the left. His vital signs are BP 248/132, HR110, RR 16, and Temp 98.4. How should this hypertensive emergency be managed in the setting of this stroke syndrome in order to minimize the risk of hemorrhage and to maximize the chance for a good outcome for this patient?

## **Hypertensive Emergency Educational Sessions & Key Clinical Questions**

### **Part One: Hypertensive Emergencies Didactic Session**

#### **Definitions, Epidemiology, Pathophysiology and Emergency Department Evaluation**

- How are hypertensive emergencies defined?
- What is the epidemiology and pathophysiology of patients who present to the ED with hypertensive emergencies and concomitant stroke syndromes or hypertensive encephalopathy?
- How do emergency physicians evaluate end organ damage in patient who present with hypertensive emergencies, and why?

#### **Hypertensive Emergency Therapies Available for Emergency Department Use**

- What oral and parenteral therapies are available to emergency physicians in order to optimize the treatment of ED patients with hypertensive emergencies and urgencies?
- What considerations govern the use of these hypertensive emergency therapies?

#### **Hypertensive Emergency Patient Management: Current Guidelines and Recommendations**

- What guidelines assist the emergency physician in treating Emergency Department patients with asymptomatic or symptomatic hypertensive emergencies and urgencies?
- What guidelines exist that assist the emergency physician in treating Emergency Department patients with hypertensive emergencies and concomitant stroke syndromes?

## **Part Two: Patient Case Presentations and Panel Discussion**

### **Key Clinical Questions**

- Are hypertensive urgency and emergencies as well as the need to treat ED patients defined mostly by the severity of end organ illness manifested by the patient as opposed to the actual BP value?
- Is the amount of desired blood pressure reduction based on the initial BP value, the end organ involved, the severity of illness, complication risk, or the apparent response to therapy that the ED patient manifests during the therapy? What is that amount?
- Is there a consensus in the ED community on an optimum value or range of BP values at which therapy can be terminated because of success in reaching a therapeutic endpoint? Who determines this consensus?
- What is this optimal endpoint in the treatment of hypertensive blood pressure management, and is it based upon Systolic BP, Diastolic BP, Mean Arterial BP, or some end organ function? Why?
- Does this optimal therapeutic endpoint need to be modified based on the type of stroke syndrome such as acute ischemic stroke as compared to intracerebral hemorrhage or subarachnoid hemorrhage?
- Does this optimal therapeutic endpoint need to be modified based on specific other end organ involvement, such as acute renal failure or acute myocardial infarction?
- What are the optimal medication therapies available to manage the blood pressure of the patient with a hypertensive emergency? Is there a “best choice” therapy? Why?
- What drugs do you most commonly use to treat ED patients with hypertensive emergencies as well as those who have a concomitant stroke syndrome?
- Is there an optimal time course for treatment of elevated blood pressure? If yes, can this standard be implemented in all comprehensive Emergency Departments, or should it be achieved optimally in the intensive care unit?
- Should patients with hypertensive emergencies be treated in the EMS setting? How?
- What published guidelines should be studied by all EMS and ED emergency care providers because of their broad scope and proven clinical relevance and applicability to successful hypertension management, enhanced reperfusion and neuroprotection, and correlation to improved clinical outcome?
- What are the medico-legal implications of the ED management of patients with hypertensive emergencies and those with concomitant stroke syndromes?