Coastal Carolina University
Athletic Training Department
Policy and Procedure Manual
Epi-Pen Usage
Revised/Reviewed 7/2011

INTRODUCTION:

Epinephrine is the drug of choice for the emergency treatment of severe allergic reactions to insect stings or bites, foods, drugs, or other allergens and for basic life support treatment for severe asthma. Epinephrine mimics the responses of the sympathetic nervous system. It quickly constricts blood vessels to improve blood pressure, reduces the leakage from the blood vessels, and relaxes smooth muscle in the bronchioles to improve breathing through bronchodilation and alleviate the wheezing and dyspnea, stimulates the heartbeat, and works to reverse the swelling and hives. The drug takes effect within seconds, but the duration of its effectiveness is short (about 10-20 minutes).

The Coastal Carolina University Athletic Training staff utilizes the Epi-Pen Auto-Injector, a disposable delivery system for self-administration. The Epi-Pen has a spring activated needle that is designed to deliver a single precise dose (0.3 mg of 1:1000 solution) of epinephrine to adults when activated. It may be necessary in very severe reactions to administer a second dose after five minutes if initial response is inadequate.

Emergency Care for Anaphylaxis and/or Severe Asthma with Epi-Pen

The athletic training staff should:

- Call for EMS (if not on-site or in-route)
- Maintain a patient airway
- Suction any secretions
- Be prepared to assist ventilation with positive pressure ventilation with bag-valve-mask
- Administer epinephrine by a prescribed auto-injector
- Initiate early emergency transport

Indications/Contraindications for Epinephrine Administration

Epinephrine should be administered if the patient exhibits signs and symptoms of a severe allergic reaction (anaphylaxis), including respiratory distress and/or shock (hypoperfusion) or severe asthma. Patients who have progressed to severe asthma experience a combination of the following: shortness of breath (>30 respirations/min), mental status changes (anxious, confused, combative, and drowsy), and inability to speak in sentences, sweaty and unable to lie down. There are no contraindications for the administration of epinephrine in a life-threatening allergic reaction or severe asthma; however, precautions should be taken with elderly patients or patients with heart disease or hypertension.

PROCEDURES:

- Check the Epi-Pen to ensure the medication has not expired, has not become discolored, and does not contain particulates or sediments.
- Prep skin site with alcohol
- Remove the gray safety cap from the auto-injector
- Place the tip of the auto-injector against the lateral aspect of the patient's thigh midway between the waist and knee
- Push the injector firmly against the thigh until the spring-loaded needle is deployed and the medications is injected (at least 10 seconds)
- Disposed of the auto-injector in a biohazard container designed for sharp objects. Be careful not to prick yourself since the needle will now be protruding from the end of the injector
- Record that epinephrine was administered, the dose, and the time of administration

Side Effects
The patient may complain of side effects following the administration of epinephrine. Possible side effects include increased heart rate, pale skin (pallor), dizziness, chest pain, headache, nausea, vomiting, excitability, and anxiousness.

Reassessment
Following the administration of epinephrine, it is necessary to reassess the patient. Reassessment should include continued evaluation of airway, breathing, and circulatory status. Decreasing mental status, decreasing blood pressure and increasing difficulty in breathing indicate the allergic reaction of severe asthma is worsening. If the condition is worsening, consider the following interventions: injection of second dose of epinephrine if second auto-injector is available, provide emergency care for shock, be prepared to administer positive pressure ventilation with supplemental oxygen if breathing becomes inadequate, and be prepared to initiate CPR and apply AED if patient is absent a pulse.

If the patient's condition improves following administration of epinephrine, continue to perform ongoing assessments. Be aware patient may complain of side effects from the epinephrine. Conscious patients may also be administered 50 mg. diphenhydramine orally or sublingually for antihistamine effects. Continue oxygen therapy with a nonrebreather device and treat for shock if necessary. Any patient requiring epinephrine administration should be transported to the closest available medical facility for follow-up evaluation and treatment as soon as possible. Remember that epinephrine is short-acting (10-20 minutes) and signs and symptoms may return as drug wears off.

Procedures for Training and Testing in Use of Epi-Pen Auto-Injector
Personnel should complete a training session each year with review of signs and symptoms and emergency medical care for allergic reaction, anaphylaxis, anaphylactic shock, and severe asthma. Personnel should complete a training session each year with instruction in the proper use and maintenance of the Epi-Pen and practice with the Epi-Pen Trainer.