Angiotensin-converting enzyme inhibitor therapy: adverse effects encountered by the otolaryngologist

♦ Sadeghi, Nader MD, FRCSC; Panje, William R. MD, FACS

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ACEI

- For hypertension & congestive heart failure
- Better tolerance compared with beta-blockers & positive effect on survival and well being
- Side effect: cough, angioedema, scaled mouth syndrome, dysphagia, dizziness, and headache.
Cough -- Epidemiology

♦ most common side effect of ACEIs
♦ Incidence: 0% and 39%
♦ Female, increasing age, Nonsmokers, Chinese and black
Cough -- Pathophysiology

Diagram:

- **Inactive fragments**
- **Bradykinin**
- **Prostaglandins**
- **Cough**
- **Inactive products**
- **Substance P**

Key:
- ACEI
Clinical presentation and treatment

♦ onset: 1 week (most) to 1 year
♦ dry and persistent and may increase at night
♦ Severity: tickle ~ debilitating cough
♦ Resolution: 1~2 weeks
♦ clarify diagnosis: withdraw the ACEI
Treatment

♦ Discontinuation of the ACEI and use of another class of medications
♦ Angiotensin II receptor blockers
♦ Aspirin (prostaglandin inhibitor) 500-mg daily
♦ Cromolyn sodium
Angioedema

- localized, transient, nonpitting edema of sudden onset
- Face, Any part of the upper airway
- rare
- Several reports have implicated ACEIs in the development of angioedema
Angioedema - pathophysiology

- ACE -- inactivates bradykinin; angiotensin I to angiotensin II (vasoconstrictor).
- mechanism of ACEI-induced angioedema -- not yet fully clear but not immunologically
- Trauma likely triggers the angioedema
Angioedema -- Epidemiology

- Incidence – 0.1% (during the 1st week)
- delayed angioedema -- 30% of patients
- no precipitating factor is identified
- not prevented by antihistamines or steroids
- not related to gender, age, or dosage but racial
- hereditary angioedema and previous upper airway manipulation or trauma
Angioedema -- Management

♦ secure the airway
♦ subcutaneous epinephrine or racemic epinephrine in a nebulizer, systemic steroids, and antihistamines
♦ Angiotensin II receptor blockers may be associated with a lower incidence of angioedema
Other side effects

♦ Scalded mouth syndrome
♦ self-limiting dysgeusia and dizziness