

## **National Influenza Vaccine Summit** *Influenza Vaccination and CVD*

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June 30, 2009

## **Flu Vaccination- SUMMARY STATEMENTS**

- Annual vaccination prevents CV morbidity and all-cause mortality in patients with CVD
- Vaccination with inactivated vaccine as secondary prevention is a Class I, level of evidence B recommendation from the ACC/AHA
- Vaccination levels in patients with CVD are below national goals
- Evidence of disparate administration of flu vaccination as a function of age, gender, race/ethnicity exists
- Only 50% of cardiology practices stock vaccine
- Influenza vaccination should be advised with the same enthusiasm as control of lipids, BP and other modifiable risk factors

## INFLUENZA

- Causes > 36,000 deaths annually
- 225,000 excess hospitalizations
- Persons with CVD are at especially high risk
- Two types: Influenza A & B
- Subtypes of each are based on antigen characteristics and reflect geographical diversity
- Immunization against one type does not confer immunity against the other; thus antigenic shifts can be quite problematic

## Vaccination recommendations

- US Advisory Committee on Immunization Practices [ACIP]
  - = 50 yrs old
  - Children 6 mos to 59 months old
  - Women who will be pregnant during flu season
  - Adults and children with chronic diseases including CVD & diabetes

## Vaccines

- **Inactivated & live, attenuated**
  - Given IM (inactivated) or intranasally (live, attenuated)
  - Targets 3 representative antigens for the current flu strain
  - Individuals with CVD should NOT receive live, attenuated due to risk of developing active disease

## FLUVACS

- **Flu Vaccination in Acute Coronary Syndromes**
  - 301 patients with CAD randomly assigned to flu vaccine vs. none
  - At 1 year the relative risk of cardiovascular *mortality* was 0.25 with vaccination
  - RR: 0.59 for composite endpoint of CV death, nonfatal MI or severe ischemia

## Flu vaccination and CVD

- In HF, flu vaccination associated with a decrease in hospitalizations
- For those at risk for stroke, flu vaccine associate with a decreased stroke risk
- [both of these are from observational case-control cohorts]

## Flu vaccination and CVD risk

- UK study
  - 39,000 patients with CVD and flu vaccination
    - ♦ 90 day follow-up: no increased risk of MI or CVA
    - ♦ At 28 days, rates of MI and stroke were *lower*

## Vaccination rates in patients with CVD

- The AHA and ACC recommend that vaccination should occur in 12 million persons with CVD in the US
- National goals as set by *Healthy People 2010*: > 60% for persons = 65 and > 90% for persons = 65
- Current thresholds [2005]: 1 in 3 adults or 34%

## Barriers to vaccination

- Availability
  - Pulmonary offices: >90% have vaccine
  - Endocrinology offices: >70%
  - Cardiology offices: ~ 50%
- Race/ethnicity
  - Similar vaccination rates for whites and blacks
  - Lower vaccination rates for Hispanics (~30%)
- Age [for persons with CVD]
  - = 65, 71%
  - 50-64, 41%
  - 18-49, 23%

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## **Selected References:**

- **Circulation 2006; 114: 1549-1553**
- **European Heart Journal 2004; 25:25-31**
- **Circulation 2000; 102:3039-3045**
- **Stroke 2002; 33: 513-518**