Flu 2013: Protect Yourself and Those You Care About

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Disclosures

I have no disclosures.

If I mention off label uses of drugs or vaccines, I will tell you it is an off label use.
Objectives

- Counsel regarding influenza vaccination
- Recognize influenza
- Prescribe antiviral agents for children
“I had a little bird.
His name was Enza.
I opened the window.
And in flew Enza.”

A chant popular during the influenza pandemic of 1918
Influenza Viruses

• Orthomyxovirus
• Types A, B and C
• Yearly winter outbreaks of A and B
• Hemagglutinin (H)
• Neuraminidase (N)
Antigenic Changes

- **Shift:** Major change in surface
  Pandemics
  To date with A only

- **Drift:** Minor change in surface
  Yearly outbreaks
Influenza Pandemics

1918: H1
1957: H2
1968: H3
1977: H1
2009: H1N1
Animal strains

- Birds: virus in the gut
- Pigs: virus in the respiratory tract
- Pig, avian and human influenza exchange genes to form novel strains: 2009 H1N1, H3N2v
Influenza: The Illness

- Symptoms: fever, chills, aches, malaise, myalgia, gastrointestinal in younger
- Signs: fever, pharyngitis, rhinitis, cough
Epidemiology

Usually winter outbreaks
Cruise ship outbreaks - Alaska in summer
Children - major role as transmitters
Droplet and contact spread
Contagious 1 day before to 7 days after
Incubation 1 to 3 days
2012 to 2013 Season
A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending May 18, 2013 - Week 20

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CDC

FLUVIEW

Centers for Disease Control and Prevention

District of Columbia

Guam

Alaska
Hawaii
US Virgin Islands
Puerto Rico

- No Report
- No Activity
- Sporadic
- Local
- Regional
- Widespread
Children and Influenza

- Highest attack rates: 15-42% yearly
- Highest hospitalization rates
- Major transmitters: shed higher titers for longer times, poor hygiene and less control of nasal excretions
Complications of Influenza

- Bacterial superinfection: pneumonia, otitis media, sinusitis
- Reye syndrome
- Triggers asthma
- Myositis
- Encephalitis
Influenza Diagnosis

- Clinical
- Culture: throat gargle or nasal wash
- Antigen detection: rapid but lacks sensitivity (70% at best)
- Serology not clinically useful
Management of Influenza

• Symptomatic:
  Antipyretics may prolong viral shedding
  Aspirin contraindicated

• Complementary therapies abound

• Antivirals: several available
Antivirals for Influenza

• Consider for children with underlying problems which increase risk
• Severe illness
• Special circumstances
• Start early for maximal effect
Children at Risk

- Underlying diseases: the usual suspects
- Neuromuscular and developmental
- Obese
- Age under 5 but especially under 2 years
Zanamivir (Relenza)

- Neuraminidase inhibitor, prevents viral entry
- Effective for influenza A and B
- Dose: 10 mg bid, inhaled
- Precaution in patients with bronchospasm
Oseltamivir (Tamiflu)

- Neuraminidase inhibitor, prevents viral entry
- Effective for influenza A and B
- Dose: varies by age and weight: 3 mg/kg/day under 1 yr; 45 mg bid if 15 to 23 kg; 60 if 23 to 40 kg; 75 if over 40 kg
- Side effects mild, gastrointestinal
Prevention of Influenza

Infection control:

• Hand washing and hand hygiene
• Isolation: masks/goggles – patients/staff
• Limit visitors/triage patient visits
• Respiratory hygiene: tissues and sleeves
• Keep your distance: 3 to 6 feet
• Stay home when you are sick
2013-2014 Vaccines

• One formulation of live attenuated: nasal
• Eleven formulations of inactivated: 10 given intramuscular; one intradermal
• Dose for intramuscular: <3 years - 0.25 ml; 3+ - 0.5 ml
• Formulations licensed for various ages

Live Attenuated Vaccine

- Cold adapted virus (LAIV)
- Won’t survive body temperature
- Same process as seasonal
- For ages 2 to 49 years
- Not for use in those with risks
- This year quadrivalent: 2 A + 2 B
Inactivated Influenza Vaccines

• Composition altered yearly
• Three or four strains: 2 A, 1 or 2 B
• For use in all over 6 months
• Multiple formulations; age matters
• Egg antigen content varies
• Cell culture/recombinant; age >18 yr
Inactivated Influenza Vaccines

• IIV3: Afluria (9+); Fluarix (3+); Flucelvax (18+); FluLaval (18+); Fluvirin (4+); Fluzone (6mo +); Fluzone Intradermal (18-64); Fluzone High-Dose (65+)

• IIV4: Fluarix Quad. (3+); Fluzone Quad (6mo+)

• REV3: FluBlok (18-49)
Seasonal Influenza Vaccine Schedule

- Yearly – start as soon as you get it
- Children under 3 years: lower dose
- Child under 9: two doses first season
- Contraindicated in persons with anaphylaxis to chicken or eggs
Chemoprophylaxis

- Agents: Oseltamivir, Zanamivir
- Indications: unable to vaccinate, pending response to vaccine, following household exposure, outbreak control
Resources

www.cdc.gov/flu/

www.aap.org – members – search takes you to

Preparing Your Practice for Providing Influenza Vaccines

Table with vaccines and codes

www.cdc.gov/vaccinesafety/