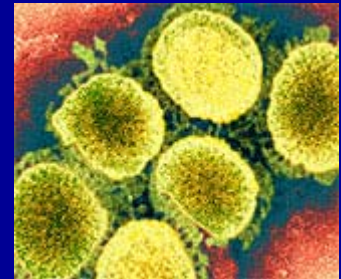


# Management of ILI in Children

Tan Kah Kee

Dept of Paediatrics

Hospital Tuanku Ja'afar Seremban



# Influenza-Like Illness

## Case Definition

- Fever  $\geq 38.0^{\circ}$  C and a cough &/or a sore throat in the absence of a known cause other than influenza
- Clinically may be difficult to differentiate from other causes of RTI
- However, in pandemic setting more likely due to influenza A/H1N1

# Confirmed Case novel Influenza A/H1N1 Infection

- Child < 12 yrs with ILI and +ve laboratory test , either by
  - a) RT-PCR
  - b) Viral culture

# Novel Influenza A/H1N1 Infections in Children

- Majority are mild & self limiting
- Most common Sx are fever(100%) , cough(100%) , sore throat(66%) , myalgia(44%) , vomiting & diarrhea(25%)
- Uncommon: altered conscious level(10%) , hypotension
- Mild cases do not need admission or Ix

# Assessment of Children with ILI in Primary Health Care Setting

- Signs of life threatening illness including conscious level
- Fever
- Signs & severity of respiratory distress
- Dehydration

# Criteria for Admission Moderate-Severe Disease

- Severe respiratory distress
- Increased respiratory rate
- Oxygen sat. < 92% (air or oxygen)
- Absence of cyanosis is a poor discriminator for severe disease
- Resp. exhaustion or apneic episode( $\geq 20''$  pause in breathing)
- Severe dehydration or shock
- Altered conscious level

# Signs of Life Threatening Illness

- Pallor , cyanosis , mottling
- Severe respiratory distress
- Weak , thready pulses

Source : Paediatric Intensive Care Society UK , 2009

# Assessment of Conscious Level

- Alert
- Responds only to voice
- Responds only to pain
- Unresponsive
- Score of P or U correspond to GCS <8 & suggest urgent referral to hospital



# Severe Respiratory Distress in Children

- Lower chest wall indrawing
- Sternal recession
- Grunting
- Noisy breathing when calm

# Increased Respiratory Rate in Children

- Measured over at least 30"
- $\geq 50$  breaths per min if under 1 yr old
- $\geq 40$  breaths per min if  $\geq 1$  year old

Source : Dept of Health UK , 2009

# Severe Clinical Dehydration or Clinical Shock

- Capillary refill time  $\geq 2''$
- Reduced skin turgor
- Sunken eyes or fontanelle

# CNS Involvement

- Irritable
- Unconscious
- Drowsiness
- Confusion
- Seizures
- Weakness or paralysis
- Floppy infant

# Severe Illness following Influenza Manifestations

- Early onset of a severe viral illness with respiratory failure
- Secondary bacterial pneumonia : frequently staphylococcal or pneumococcal
- Destabilisation of a pre-existing chronic condition eg. bronchial asthma

# Sx of Severe Disease in Children

- Apnea
- Tachypnea
- Dyspnea
- Cyanosis
- Dehydration
- Altered mental status
- Extreme irritability

# Co-morbid Factors in Children

- Cardiac disease : congenital heart dis.
- Chr. resp. disease : asthma , BPD
- Chronic renal failure
- Haemoglobinopathies
- Diabetes mellitus
- Chr. neurological disease : ms. Dystrophy
- Impaired immunity:HIV,malignancy,Rx
- Malnutrition or obesity

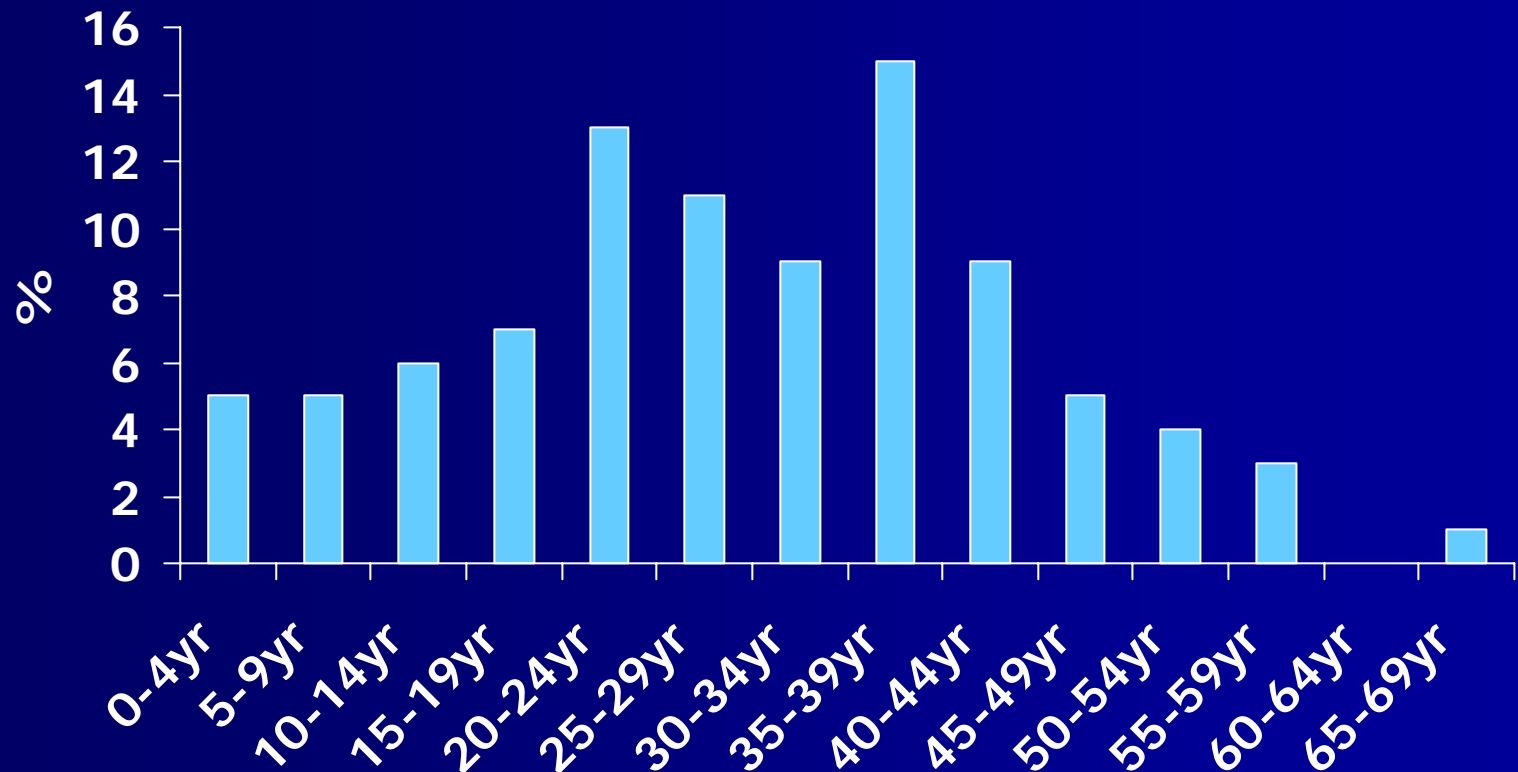
\* Children < 5 yrs : Higher risk of severe disease & mortality

# Complications of Influenza in Children

- Bacterial pneumonia
- Bacterial otitis media
- Seizures
- Encephalitis/meningitis
- Myocarditis



# Mortality of Severe novel Influenza A/H1N1 Pneumonia



# Home Assessment Tool for Parents & Caregivers

- Lethargy or poor oral intake
- Change in mental status or behavior
- Signs of dehydration
- Signs of respiratory distress
- Fits
- Cyanosis
- Persistent fever > 2 days

# Use of Antivirals for Rx of Pandemic Influenza H1N1 Infections

- Children with severe or progressive illness should be Rx with oseltamivir
- Rx should be initiated asap
- Children in “at-risk” groups (**children < 5yrs & chr. co-morbid conditions**) with uncomplicated illness should be Rx with oseltamivir or zanamivir
- Children not in “at-risk” groups with uncomplicated illness need not be Rx with antivirals

# Oseltamivir

## Weight-adjusted Doses

Weight(kg)	Dose for 5 days
≤ 15	30mg BD
15-23	45mg BD
>23-40	60mg BD
>40	75mg BD

# Oseltamivir

## Dosing < 1 yr

Age (mth)	Dose for 5 days
< 3	12mg BD
3-5	20mg BD
6-11	25mg BD

# Oseltamivir

## Side Effects

- **Gastrointestinal(40%)** : nausea , vomiting , stomach pain/cramps, diarrhea
- **Neuropsychiatric(18%)** : sleep problems , insomnia , poor concentration , delirium , feeling confused , hallucinations , bad dreams , nightmares , abnormal behavior

# Zanamivir

## Doses

- 5-9 yrs : 10mg(2 inhalations) BD
- 10-12 yrs : 10mg(2 inhalations) BD
- Side effects :
  - bronchospasm in asthma
  - diarrhea
  - nausea
  - cough
  - dizziness / headache

# Mx of infant born to mother Rx for suspected influenza H1N1

- Breastfeeding should be continued due to antiinfective properties of breast milk & low conc. of antivirals in milk
- Mother to wear surgical mask & practise hand hygiene
- Oseltamivir & zanamivir compatible with breastfeeding
- Limited data suggest oseltamivir is not a major human teratogen

Source : Tanaka T et al.CMAJ 2009;181:55-8  
Dept of Health UK 2009



# Conclusions

- Careful clinical assessment of the child with ILI in primary healthcare setting is imperative
- Parents should be duly advised on home monitoring for those Rx as outpatient
- Antivirals recommended for at-risk children
- Breastfeeding to continue for infants born to mothers Rx for ILI but with advice on surgical masks and hand hygiene for mothers