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INFLUENZA and the flu-like symptoms

from Medieval Latin "Influentia", influence (so called apparently from the belief that epidemics were due to the influence of the stars)

The word "pandemic" gets thrown around a lot. Every year there is a flu "pandemic".

NATURAL HISTORY:

Day 0: Exposure occurs.

Transmission is via droplets. Infected people have huge amounts of the virus in their respiratory secretions. Its not just getting coughed or sneezed on – you can get it merely TALKING to an infected person.

Day 1: Incubation commences.

You are probably asymptomatic, but the virus is reproducing. Symptoms start 24 to 48 hrs following exposure.

Viral shedding PEAKS at 24 to 48 hrs; you are at your most infectious just at the point of feeling the symptoms for the first time.
You remain slightly infectious for about 5-10 days in total.
Children and the elderly remain infectious for longer

Day 2: Symptoms develop.

Fever of influenza lasts for the whole 5-7 day course of the illness, not just the first 24-48hrs like the other respiratory viruses.

- FEVER
- HEADACHE
- MALAISE, "I feel like shit"
- MYALGIA
- COUGH, usually dry
- SORE THROAT

Physical signs are few:

- Throat may be hyperemic and red
- There may be cervical lymphadenopathy

People at risk of dying from the flu:

- the elderly
- the children
- immunocompromised people
- diabetics
- dialysis patients
- people with congestive heart failure
- people with COPD

Day 3 to Day 7: Gradual improvement...

IF you are a normal person. The elderly and the immunocompromised may not get off so easily.

Aftermath: some people feel fatigued and weak for WEEKS after a flu. This is "post-influenza asthenia".
It DOES resolve eventually.

FATAL COMPLICATIONS: lets say you are not a perfectly healthy 20 year old

SECONDARY BACTERIAL PNEUMONIA: common, 25% of influenza deaths

As later explained, influenza disables the barrier function of the respiratory epithelium. *Strep Pneumoniae* is the commonest pathogen here (48%) followed by *Staph Aureus* and *Hemophilus*.

Stereotypically: the flu improves for 5 or so days, and then, suddenly – a high fever and cough develops, this time with purulent sputum.

PRIMARY INFLUENZA PNEUMONIA: rare

is what you think about when after 5-7 days the infection FAILS to resolve.
This is the virus causing consolidation, with typical Xray findings. The patient will now have a moist cough. Dyspnoea and progression to cyanosis may occur!

All of the above:

What normally happens is a mixed viral/bacterial pneumonia.

The key feature is: your patient was getting better, but is now getting worse.

SYSTEMIC COMPLICATIONS:

Myositis +/- Rhabdomyolisis: most people get myalgia with the flu, but most don't go on to develop true myositis with a CK rise.

CNS involvement, including Guillain-Barre Syndrome may include rare weird things like encephalitis in HIV patients, transverse myelitis, aseptic meningitis, and so on.

Myocarditis / Pericarditis is absurdly uncommon and was mainly documented during the 1918 pandemic. Now THAT was a pandemic….

DIAGNOSIS

during a KNOWN INFLUENZA OUTBREAK:

Best predictor: development of fever and cough within 48 hrs of onset of symptoms (which are URTI symptoms: runny nose, sore throat etc…)- positive predictive value is around 79%, i.e. 79% of patients with this history will actually have the flu.
[this is most accurate]

SPORADIC CASES:

Cannot be differentiated from other respiratory viruses! Clinically, they all look similar.

DIAGNOSTIC GOLD STANDARD:

VIRAL CULTURE; takes 48-72 hours.
Most accurate in the first 48 hrs (viral shedding is greatest during this time)

MANAGEMENT:

Uncomplicated influenza, caught after 48 hrs:

- Rest
- Oral fluids
- Paracetamol
- Cough syrup

ANTIVIRAL DRUGS:
Effect is greatest when
- the symptoms started less than 30 hrs ago
- the patient is febrile at presentation

Uncomplicated influenza, caught within 30 hours:

- Antiviral drugs are indicated when one is trying to control an outbreak, or when the patient is at risk of serious complications (eg. a HIV or chemotherapy patient)
- TAMIFLU (oseltamivir) 75mg po bd for 5 days

Complicated influenza, i.e. pneumonia – probably presenting 5-7days after onset

- Follow the existing community acquired pneumonia guidelines. At the time of writing, the drugs du jour seem to be Augmentin Duo Forte and Roxithromycin.

Vaccination:

- Contraindicated if you have an existing URTI or febrile illness, or if you have had Guillain-Barre Syndrome before.
- Indicated for just about everybody else

Influensa A, B, C? Whats the difference?

There really isn't a great deal of difference from the perspective of an emergency doctor.
Type A is more virulent, mutates faster, and causes a more severe disease. A pandemic is typically type A.
Type B mutates slower and is less severe.
Type C is rare, but is also likely to cause a severe illness.