

Influenza

This is an acute viral respiratory infection commonly known as flu, is caused by RNA viruses of the family Orthomyxoviridae.

Incubation period 1-4 days

fever, myalgia, sore throat, nonproductive cough, headache. Secondary bacterial pneumonia is an important complication.

There are 4 main types of the influenza viruse, A, B, C, D

New antigenically strains which account for massive pandemic, most epidemic belong to type A and it's the most virulent human pathogen among the three.

Influenza type A viruses are divided into subtypes based on two proteins on the surface of the virus. These proteins are called hemagglutinin (H) and neuraminidase (N). The current subtypes of influenza A viruses found in people are A (H1N1) and A (H3N2). Influenza B virus is not divided into subtypes and it is less common than type A.

H1N1, which caused Spanish flu in 1918, and Swine Flu in 2009

H2N2, which caused Asian Flu in 1957

H3N2, which caused Hong Kong Flu in 1968

H5N1, which caused Bird Flu in 2004

H7N7, which has unusual zoonotic potential

H1N2, endemic in humans, pigs and birds

Influenza A and C infect multiple species, while influenza B almost exclusively infects humans. Wild aquatic birds are the natural hosts for a large variety of influenza A (15H & 9N) viruses.

Occasionally viruses are transmitted to other species and may then cause outbreaks in domestic poultry or give rise to human influenza pandemics.

Type D usually don't infect human. It infects cattle and pigs.

Air-born droplets, and by contact- directly and indirectly through the handling of contaminated articles.

Communicability - 1 day before to 5 days after onset of illness. (adults).

Lab. diagnosis:

Isolation of virus on culture of throat washing

Serological tests: CF(complement fixation), HaemAgglutination test,

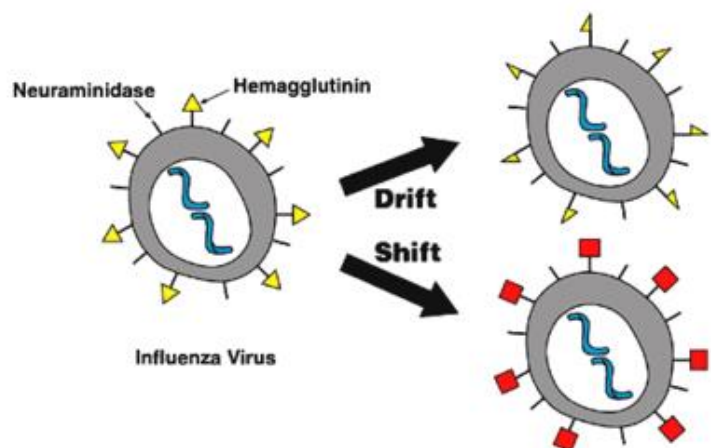
EIAs(enzyme immunoassays, PCR(polymerase chain reaction).

Influenza reaches peak prevalence in winter, and because the Northern and Southern Hemisphere have winter at different times of the year, there are actually two different flu seasons each year.

Indoor, dehydrated mucus, virus survive on solid material more in winter.

Epidemic and pandemic spread

New influenza viruses are constantly being produced by mutation or by reassortment. Mutations can cause small changes in the hemagglutinin and neuraminidase antigens on



the surface of the virus. This is called antigenic drift, which creates an increasing variety of strains over time until one of the variants eventually achieves higher fitness, becomes dominant, and rapidly sweeps through the human population – often causing an epidemic. In contrast, when influenza viruses re-assort, they may acquire new antigens — for example by reassortment between avian strains and human strains; this is called antigenic shift. If a human influenza virus is produced with entirely new (recent origin) antigens, everybody will be susceptible and the new influenza will spread uncontrollably, causing a pandemic.

Prevention:

- Educate public and health care personnel about personal hygiene, unprotected coughs and sneezes, and hand washing regularly to prevent mucous membrane transmission.
- Reduce overcrowding in living places and workplaces.
- Surface sanitizing is recommended in areas where influenza may be present on surfaces. Alcohol is an effective sanitizer against influenza viruses.

Control:

Active immunization by inactivated influenza virus, Polyvalent vaccines
The vaccine recommended for elderly and other vulnerable groups like chronic lung disease.

Types of Influenza Vaccines:

- 1- Quadrivalent Influenza Vaccine: Brand names: AFLURIA Quadrivalent, Fluarix Quadrivalent,
- 2- Live Attenuated Influenza Vaccine (The Nasal Spray Flu Vaccine. designed to protect against four flu viruses: an influenza A(H1N1) virus, an influenza A(H3N2) virus and two influenza B
- 3- Adjuvanted Flu Vaccine Flu Vaccine with Adjuvant, brand names FLUAD and FLUAD Quadrivalent.
- 4- Recombinant Influenza (Flu) Vaccine
- 5- Cell-Based Flu Vaccines. Brand name: Flucelvax Quadrivalent

Treatment:

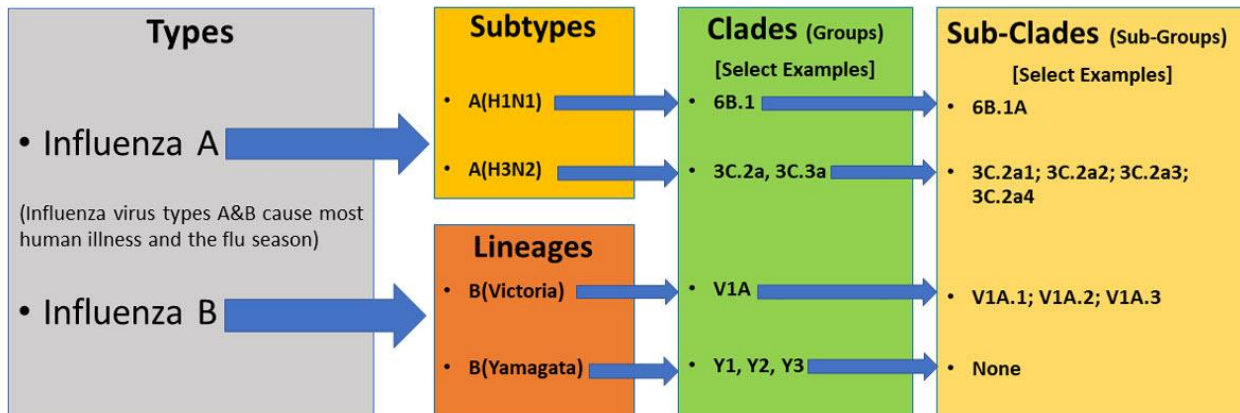
People with the flu are advised to get plenty of rest, drink a lot of liquids, avoid using tobacco and, if necessary, take medications such as paracetamol to relieve the fever and muscle aches associated with the flu. antibiotics have no effect on the infection.

Antiviral medication is sometimes effective, but viruses can develop resistance. The two classes of anti-virals are neuraminidase inhibitors and M2 inhibitors.

Neuraminidase inhibitors

Antiviral drugs such as oseltamivir (**Tamiflu**) and zanamivir (**Relenza**) are neuraminidase inhibitors that are designed to stop the spread of the virus in the body.

Human Seasonal Influenza Viruses



Know the differences

COVID-19	ALLERGIES	FLU	COLD
<ul style="list-style-type: none"> <input type="checkbox"/> Fever <input type="checkbox"/> Body aches <input type="checkbox"/> Shortness of breath <input type="checkbox"/> Dry cough <input type="checkbox"/> Sore throat <input type="checkbox"/> Nausea <input type="checkbox"/> Diarrhea <input type="checkbox"/> Loss of smell and taste <input type="checkbox"/> Worsening symptoms after one week <input type="checkbox"/> Headaches 	<ul style="list-style-type: none"> <input type="checkbox"/> Sneezing <input type="checkbox"/> Itchy eyes/nose/throat <input type="checkbox"/> Headaches <input type="checkbox"/> Clear runny nose <input type="checkbox"/> Waxing and waning of symptoms <input type="checkbox"/> Seasonal 	<ul style="list-style-type: none"> <input type="checkbox"/> Cough often with mucus <input type="checkbox"/> Body aches <input type="checkbox"/> Fever <input type="checkbox"/> Fatigue <input type="checkbox"/> Stuffy nose <input type="checkbox"/> Clear or colored nasal mucus <input type="checkbox"/> Sore throat <input type="checkbox"/> Improves within 7-10 days 	<ul style="list-style-type: none"> <input type="checkbox"/> Cough <input type="checkbox"/> Runny and stuffy nose with discolored mucus <input type="checkbox"/> Muscle or body aches <input type="checkbox"/> Sneezing <input type="checkbox"/> Headache <input type="checkbox"/> Sore throat <input type="checkbox"/> Fever unlikely

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