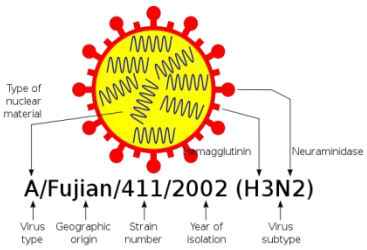
INFLUENCE VIRUS A AND B

THE VIRUS

Virus of influences A, B and C belongs to the Orthomyxoviridae family and they infect different species, with the exception of the influence B, which infects quite just the human being. Virus A and B present on the surface 2 glycoproteins:

- Hemagglutinin (it's signed by the letter H)
- Neuroaminidase (it's signed by the letter N).



Influenza A virus: they're the most virulent pathogens in the human being and they provoke the most serious diseases. A: according to the glycoproteins on the surface, the virus A divides in subtypes (or serotypes): actually, just 16 subtypes of hemagglutinin (from H1 to H16) and 9 subtypes of neuroaminidase (from N1 to N9) are known. All these subtypes were found in winged animals species, while the human being and other animals host just some subtypes of the virus. This means, that birds are natural tanks of the A virus. In particular, water, wild winged animals are the natural hosts of a great variety of the virus of type A, which occasionally can be transmitted to other species, with consequences such as terrible breeding grounds in poultry or in humans' pandemic.

Influenza B virus: the virus of the Influenza B is quite almost a human's pathogen and it's less common than the influenza A. The only vulnerable animals to the virus B, beyond the human being, are pinnipeds. This type of influence changes 2-3 times less rapidly than the type A, and, as a consequence it has a lower genetic difference (it's known just one serotype). Thanks to this antigenic difference, it's normally acquired just one grade of immunity to the influenza B. however, even the influenza B changes sufficiently rapidly, and this fact blocks a permanent immunity. The reduced rate of antigenic mutation, combined to a low hosts' range (it prevents an antigenic transfer among different species) ensure the impossibility of pandemics of the influenza B.

Influenza C virus: the influenza C infects the human being and pork and it can provoke serious diseases and local epidemics. However, influenza C is less common than the others types and normally it seems to provoke just softer disturbs.

CLINICAL MANIFESTATION

The influenza is a viral and highly contagious infection of the breathing apparatus. The virus is easily transmittable through small drops thanks to cough and sneeze. The immediate diagnosis of influenza A and B is nowadays more important than in the past, seen that there are many efficient antiviral therapies. Every symptoms of the influenza are common to many other diseases, and for this reason they can be especially confused with the pharyngitis, the tonsillitis and the cold. Generally, the influenza is characterized by the sudden manifestation of first symptoms, followed by shivers and perspiration.

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Further information or bibliographic references can be asked to the laboratory.

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CLINICAL MANIFESTATION	
	In particular: fever over 38 degrees (about 3 and 4 days), headache, disease and muscle pains (which are often very strong), weariness and weakness (about 2-3 weeks). Other less common symptoms are: cold, rhinitis, throat ache, breast ache during the respiration and especially cough, anorexia and photophobia.The influenza can even bring to death, especially in weak subjects, old people or with chronic diseases. A certain diagnosis is possible just with the isolation of the virus of cellular cultures, with the titration of specific antibodies or with molecular biology techniques, which are able to distinguish the RNA of the influenza virus from the breathing or from the para-influenza virus.
EPIDEMIOLOGY	
	Epidemics of influenza appear every year during autumn and winter. The virus of type A have typical an higher incidence than the ones of type B, and they're responsible of the most serious influences, while virus of type B are normally softer.
PREVENTION	
	Infected people are highly contagious between the second and the third day after the infection, which goes on for about 10 days. Generally, children are more contagious than adults. The virus propagation occurs thanks to the aerosol particles and the contact with contaminated surfaces. It's very important to cover the mouth (it would be better with the elbow) when someone sneezes and to regularly wash the hands. In zones where the virus can be present on surfaces, it can be recommendable a disinfection with alcohol.
VACCINATION	
	Influenza vaccines can be produced in many ways. The traditional method consists in developing the virus in chicken's fertilized eggs. After the purification, the virus is inactivated. As an alternative, the virus can be cultivated in eggs up to the loss of its virulence, so that it can be produced an alive attenuated vaccine. Beyond these two vaccines, there are even split vaccines, made by viral particles which are undergone to lysis, or subunits vaccines (they contain just glycoproteins which create the external covering of the virus). The efficacy of vaccines is variable. Thanks to the rapid virus mutations, a particular vaccine normally gives protection just for a limited period of time. Every year, the OMS researches the stocks which will be in circulation the next year, allowing the pharmaceutical industries to develop vaccines, which will give a better immunity. However, the vaccine is reformulated every year fore some specific stocks. It's not possible to include every stocks which will infect population during the influenza season. Thanks to that it's possible to be vaccinated and at the same time to contract the influenza. Moreover, it's possible to get infected before or immediately after the vaccination and to fall ill with the stock which should have been prevented by the vaccine, because the vaccination needs about 2 weeks to become efficient.

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TREATMENT

General tips are the rest, to drink many liquids, to avoid alcoholic drinks and smoke. The use of medicines with a paracetamol base can be useful for the fever and for muscle pains associated to the influenza.
There are now two types of antiviral medicines:

- neuroaminidase inhibitors: the oseltamivir (Tamiflu) and the zanamivir (Relenza) block the virus replication in the organism.

- M2 inhibitors: amantadine and rimantadine block the ionic viral channel and prevent the infection of cells by the virus.

THE TEST

The test BinaxNOW for influenza A and B virus is an immunochromatographic dosage in vitro to have a qualitative revelation of the nucleoprotein antigens of the influenza A and B in clinical samples. It's known as an auxiliary for the rapid differential diagnosis of the infection from influenza A and B virus.

SAMPLE TAKING

Sample taking done by means of a nasopharyngeal swab (NF) and of a nasal washing/aspiration.

EXECUTION

Daily

COST

According to the federal charge rate of the analyses (3116.00) TP 14.8

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