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The New Flu and Patients with Heart Disease: Guidelines of the Hellenic Cardiological Society

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Patients with chronic cardiovascular disease belong to a high-risk group for flu infection and the occurrence of complications. There are 39 studies, as well as a recent meta-analysis (Lancet Infectious Diseases, October 2009), that have correlated flu infection with the occurrence of an acute coronary syndrome, while the clinical benefit of anti-flu vaccinations in reducing morbidity and mortality among patients with heart disease has been verified. For this reason, all major international Infection and Cardiological Societies recommend in their guidelines an annual anti-flu vaccination for those with heart disease, from the age of 6 months and over.

The new H1N1 flu virus

Even though patients with chronic cardiovascular disease are still near the top of the list of high-risk groups, the epidemiological distribution of H1N1 flu cases is somewhat unusual and is different from that of seasonal flu. One basic difference is that around 80% of recorded cases involve individuals below 30 years of age, while those aged over 65 (including the majority of heart disease sufferers) make up only 2% of the total. It appears that the elderly have a lower risk of infection, perhaps because of cross-immunisation as a consequence of exposure to older strains of flu virus A (e.g. in the 1950s): however, if they do get infected they run a high risk of complications.

H1N1 is transmitted in the same way as seasonal flu, but its incubation period is a little longer (3-4 days). As regards the clinical picture, H1N1 is a mild disease, and it is estimated that 50% of those infected had no symptoms. Compared to seasonal flu, concomitant gastrointestinal symptoms are seen more often in H1N1

(about 24% of cases), especially in younger patients.

It is estimated that 15% of patients with the new flu will have some kind of complication, but only 1-2% of all cases will need hospital care. It is difficult to arrive at accurate figures because most cases go unreported. Concerning mortality, only 53% of the patients who died had a coexistent condition, while it appears that the groups with relatively higher mortality were pregnant women and individuals with malignant obesity (body mass index >30). Of patients with heart disease who were infected by H1N1, a complication requiring hospitalisation occurred in around 17%.

Practical guidelines

Diagnostic criteria for H1N1 flu virus (Ecdc 4/2009)

1. Clinical (febrile acute respiratory disease).
2. Laboratory (confirmation with reverse transcription polymerase chain reaction [RT-PCR], later serological confirmation of flu).
3. Epidemiological (e.g. contact with confirmed case).
As the disease becomes more widespread in the general population, the epidemiological criterion will of course become less useful.

Patients with chronic cardiovascular disease (with the exception of uncomplicated idiopathic hypertension) who show signs of flu syndrome should be checked and should have a pharyngeal smear taken for laboratory testing. Smears can be taken at any hospital on duty. The new, faster tests for flu are not a replacement for PCR, being of limited sensitivity.

If there is a high clinical suspicion of H1N1 flu, antiviral treatment should be given immediately after the

smear is taken (oseltamivir 75 mg \times 2, or zanamivir two 5 mg inhalations \times 2) for 5 days, without waiting for the results of the test. The benefit of antiviral medication is greater the sooner it is started (in any case within 48 hours from the appearance of symptoms) and if the pharyngeal smear test proves negative antiviral treatment is stopped.

According to the patient's clinical condition and the physician's judgement, the patient may be admitted to hospital or may remain at home. In the latter case, the symptoms should be closely monitored and if there is deterioration medical assistance should be sought immediately. It is recommended that patients stay at home for 7 days, or until 1 day after the complete disappearance of symptoms. Patients should be told not to stop taking their cardiovascular disease medication without consulting their doctor.

Special attention should be paid to patients aged below 18 years who are taking aspirin and suffer from flu, because of the possibility of Reye syndrome.

Any cardiovascular patient who comes into contact with a confirmed case of H1N1 flu is a candidate for prophylactic antiviral treatment (oseltamivir 75 mg \times 1, or zanamivir two 5 mg inhalations \times 1) for 10 days. The decision should be individualised according to the risk profile of each patient. No prevention is 100% effective and cases have already been described of resistant H1N1 strains in some patients who have taken prophylaxis.

Prevention

On September 25, 2009, the European Pharmaceutical Organisation announced the approval of two new vaccines for pandemic H1N1 flu (Pandemrix from Glaxo and Focetria from Novartis), while approval is also expected for other drugs. Patients with chronic cardiovascular disease should be among the first to be vaccinated; however, it seems likely that the next pandemic wave in Greece will come before mass vaccination.

In brief, patients with chronic cardiovascular disease should be vaccinated as follows:

- Seasonal flu vaccine, as every year
- Pneumococcus vaccine (repeated every 5 years in those aged <60 years)
- Vaccine against pandemic H1N1 flu

As for the physician, the data are changing very rapidly and such a fluid situation as today's requires that we remain calm and well-informed.

Reference sources

Center for Disease Control (www.cdc.gov)
European Centre for Disease Prevention and Control (www.ecdc.europa.eu)
World Health Organisation (www.who.int)
Hellenic Centre for Infectious Diseases Control (www.keelpno.gr)
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