



Travel-Related Influenza A/H1N1 Infection at a Rock Festival in Hungary: One Virus May Hide Another One

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DOI: 10.1111/j.1708-8305.2010.00410.x

Mass gathering is well known to concentrate and amplify the transmission of infectious respiratory diseases. Here we report a possible case of coinfection with influenza A/H1N1 and varicella in a young French traveler returning from a rock festival in Hungary. We report a cluster of influenza A/H1N1 cases at this festival.

We report the case of a 23-year-old man who was hospitalized 3 days after returning to France from a rock festival in Budapest, Hungary. The rock festival took place in Sziget Island from 11 to 18 August, 2009. On 17 August, he complained of diarrhea and rhinorrhea without fever. The next day, he went back to France and complained of fever (39.5°C), chills, and cough. On 19 August, a vesicular rash appeared. As he returned from a rock festival¹ he was referred by his doctor to the H1N1 flu consultation at our department. Clinical examination revealed a disseminated vesicular rash predominantly on the trunk, typical of varicella. Pulmonary examination, pulse oxymetry, and the rest of examination revealed no abnormalities. A nasopharyngeal swab specimen was obtained for the diagnosis of A/H1N1 infection. A cutaneous swab and a serology for varicella zoster virus (VZV) were also performed. The chest radiography was normal. Laboratory parameters were normal. Real-time polymerase chain reaction (PCR) detection of influenza A/H1N1 virus, was positive on the nasopharyngeal sample using two tests.² Real-time PCR detection of VZV was also positive in both blood and cutaneous specimens. VZV serology showed the presence

of specific IgM and IgG through enzyme-linked immunosorbent assay (ELISA) test (Dade Behring) compatible with a primary infection with VZV causing varicella. The patient was hospitalized into an individual room using respiratory and contact isolation procedures as recommended for influenza A/H1N1 and varicella. Oseltamivir (75 mg, two times per day) and valacyclovir (1 g, three times per day) were prescribed for 5 and 7 days, respectively, with a favorable outcome. Oseltamivir and valacyclovir were concomitantly used because a pulmonary infection by both A/H1N1 and VZV virus was suspected, and in reason of asthma in the past medical history of the patient. Sensitivity of the A/H1N1 virus strain to oseltamivir was not tested. The patient was discharged 3 days later with recommendations to carry on the isolation protections at home. Fifteen days later he was seen as an out-patient and he was well. Follow-up of viral shedding was not done.

Some 390,000 young people gathered during the 2009 Sziget festival. In the context of the current swine origin H1N1 flu pandemic, a separate medical tent was dedicated to attend participants showing flu symptoms. Possible cases were referred to Szent Margareta local hospital in a dedicated separate department for further investigation. Overall, during the Sziget event, 14 individuals were admitted to St Margareta Hospital (3.6 per 100,000 individuals). Among these cases, eight (57.1%) tested positive for H1N1 by real-time PCR

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detection on nasal swab samples. Seven patients recovered under antiviral treatment. A 22-year-old French man recovered more slowly and was repatriated to France. Additional investigation through EuroTravNet (<http://www.istm.org/eurotravnet/main.html>) did not reveal any other cases in travelers returning from the Sziget festival to European countries. According to the European CDC Influenza Surveillance Network (http://ecdc.europa.eu/en/activities/surveillance/eisn/pages/eisn_bulletin.aspx), the overall incidence rate of influenza-like illness (ILI) in Europe during the weeks 33 to 34 of 2009 was 34.9 per 100,000 with 15.3% H1N1 positive cases. In Hungary, the ILI incidence rate was 7.8 per 100,000 in the community. We observed a lower ILI activity at Sziget festival, possibly because all ill visitors did not seek care at the medical tent. However, the proportion of specimens positive for H1N1 influenza virus was 3.7 times that of overall European value.

We report the second cluster of influenza H1N1 associated with a rock festival in Europe, besides the one in Belgium in July 2009 where 11 cases were diagnosed.¹ In the cluster reported here, it is not surprising that two of nine influenza H1N1 cases occurred in French travelers, as they represent almost 25% of visitors at this festival (http://forums.nouvelobs.com/culture/sziget_festival,20090706160845588.html). Mass gathering has been identified as areas for viral exchange and amplification. The Hajj, which is the most important mass gathering in the world, is drawing to a close, and despite stringent vaccination and hygiene recommendations,^{3,4} it is likely that influenza H1N1 will be disseminated in pilgrim-origin countries. Physicians who see returned Hajj travelers should be alert about imported infections. In this context, surveillance of imported infectious diseases appears to be a very critical issue.

Furthermore, we also report a rare case of possible coinfection of influenza virus and varicella in a young man. To our knowledge, such a coinfection was previously reported once in the context of Reye syndrome in a 10-year-old boy.⁵ In the case reported here, the responsibility of influenza virus for the observed symptoms cannot be formally established. Without systematic influenza A H1N1 search at our department in inpatients suffering fever, this possible coinfection would probably not have been recognized. The positive nasal swab for influenza A/H1N1 virus in our case may account for a nasal carriage in a healthy carrier for influenza. Indeed, in a recent investigation of an influenza A/H1N1 outbreak in France, about 10%–20% of people tested by PCR for H1N1 were positive and asymptomatic.⁶ It could also account for a persistent A/H1N1 virus shedding. Recently, reports showed that H1N1 viral shedding may persist from 10 to 17 days after the onset of disease, particularly in patients less than 14 years, in male patients, and in patients for whom oseltamivir therapy was started more than 48 hours after the onset.⁷ Nevertheless, our patient

had no history of recent flu syndrome before the onset of his disease. During the festival, our patient was probably in incubation for varicella and contracted influenza at the festival.

This report underlines the challenge of isolation in a pandemic situation. Indeed, if in our case, both viruses need the same isolation protections, in other coinfection or in differential diagnosis, especially after travel, patients could be hospitalized without isolation protections leading to a risk of nosocomial outbreak.

Thus, physicians should be aware of and be ready to test readily for influenza 2009 H1N1 patients with general symptoms, in particular, after they have traveled or participated in a mass gathering. Also, the appropriate isolation protections should be used during hospitalization for eliminating influenza 2009 H1N1 infection. Finally, it can be said that in this pandemic situation, one virus may hide another one.

Acknowledgment

We thank Dr Ferenc Levardy, Medical Director of Szent Margareta Hospital, for providing medical data.

Declaration of Interests

The authors state they have no conflicts of interest to declare.

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