

28.015

Multifocal cerebral hemorrhages in H1N1 SOIV influenza patients: Report of 2 cases

E. Carvalho Siqueira, L.M. Carvalho valle, A.D.F. Borges, P.S. Gonçalves da Costa*

Hospital Monte Sinai & Suprema Medical School, Juiz de Fora MG, MG, Brazil

Background: Neurological complications of influenza have been scarcely reported possible under-recognized. The full description of clinical forms of the current pandemic influenza is currently underway. Several different neurological syndromes have been associated with influenza but no cases of multi-focal cerebral hemorrhages have been reported so far. The aim of this report is to present 2 cases of multiple focal cerebral hemorrhages in patients with influenza H1N1 pandemic.

Methods: Clinical, laboratorial and imaging data of 2 cases of influenza and serious neurological symptoms are presented. Cranial CT scan was performed in both cases. Influenza virus identification in upper respiratory secretion (UPS) was performed by real-time reverse transcriptase-polymerase-chain-reaction assay. Cerebrospinal fluid (CSF) was analyzed. No necropsy or brain biopsy were performed

Results: Case n° 1: 32 years old pregnant woman with flu like symptoms, evolved to severe pneumonia and ARDS requiring mechanical ventilation. She developed comma and cranial CT scan has shown multiple hemorrhagic foci scattered throughout the brain and subarachnoid hemorrhage (SAH) (Figure 1). CSF was hemorrhagic. No hemorrhagic disorder was found and eclampsia was ruled-out. Despite oseltamivir therapy she eventually died. H1N1 SOIV was isolated from UPS.

Case n° 2: 51 years old male with flu like symptoms evolved to ARDS and respiratory insufficiency demanding ICU and mechanical ventilation. He developed status epilepticus. Cranial CT scan showed multifocal hemorrhages. Lumbar CSF was hemorrhagic. H1N1 SOIV was isolated from UPS. Despite therapy with oseltamivir he eventually died.

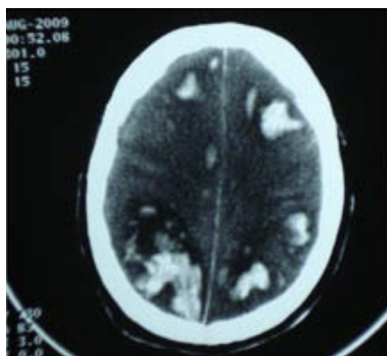


Figure 1: Cranial CT scan showing multifocal hemorrhage in frontal, parietal, temporal and occipital lobes, as well as SAH and intraventricular hemorrhage

Conclusion: Influenza has imposed an under-recognized burden of central nervous system disease so far. Well known neurological syndromes associated with influenza virus in humans have been febrile convulsions, acute encephalitis, acute encephalopathy, Reye's syndrome, Guillain-Barré syndrome, Kleine-Levin syndrome and post encephalitic

Parkinson's disease. Some encephalitis cases with petechial lesions in the brain have also been reported. The highly pathogenic H5N1 influenza virus has shown neurological damage in both birds and humans. Current medical literature, including some up-to-date publications of H1N1 pandemic haven't shown the occurrence of multifocal hemorrhagic neurological syndromes. The cases here presented should aware practitioners for such possibility especially because many seriously ill influenza patients in ICU have been kept under sedation so hiding several neurological symptoms.

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Development of a consensus microarray method for identification of different influenza A viruses

D. Barlic - Maganja^{1,*}, A. Fratnik Steyer², N. Toplak³, A. Zrimec⁴, O. Zorman Rojs²

¹ *University of Primorska, Izola, Slovenia*

² *University of Ljubljana, Ljubljana, Slovenia*

³ *OMEGA Ltd., Ljubljana, Slovenia*

⁴ *Institute of Physical Biology Ltd., Ljubljana, Slovenia*

Background: Rapid and reliable identification methods are fundamental for the comprehensive characterization of emerging and evolving influenza viruses. A consensus microarray approach for detection and a panel of specific probes covering 16 hemagglutinin (HA) subtypes of influenza type A viruses has been designed.

Methods: Nucleotide sequences of all available influenza A virus subtype combinations, isolated from various species on different geographic regions were selected from GenBank and from influenza virus specific databases (FLU Database, Influenza Research Database). Among them 192 sequences of matrix (M) protein gene and 206 sequences of hemagglutinin (HA) gene were aligned and arranged, respectively, using ClustalX and BioEdit programmes.

Results: For the influenza A virus detection oligonucleotide probes were selected on the virus M gene. 16 different segments of this gene were used for the construction of 37 probes. The probes for simultaneous identification of different subtypes were selected on 6 different parts of the virus HA gene. For each HA subtype at least 10 probes were designed on the 1770 nts long segment 4.

Conclusion: Oligonucleotide microarray method was designed for simultaneous detection and subtyping of influenza A viruses. The evaluation of developed approach including all 16 HA subtypes is in progress.

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