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VIROLOGIA

CLINICAL AND EPIDEMIOLOGICAL IMPACT OF HUMAN PARAINFLUENZA VIRUSES INFECTIONS IN IMMUNOCOMPETENT AND IMMUNOCOMPROMISED PATIENTS.

F. Novazzi [1], A. Piralla [4], F. Giardina [2], A. Fratini [4], F. Rovida [4], F. Baldanti [3]

[1]*1 Molecular Virology Unit, Microbiology and Virology Department, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; 2 Specialization School of Microbiology and Virology, University of Pavia, Pavia, Italy*

[2]*1 Molecular Virology Unit, Microbiology and Virology Department, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; 2 Specialization School of Microbiology and Virology, University of Pavia, Pavia, Italy*

[3]*1 Molecular Virology Unit, Microbiology and Virology Department, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy; 2 Specialization School of Microbiology and Virology, University of Pavia, Pavia, Italy; 3 Department of Clinical, Surgical, Diagnostic*

[4]*Molecular Virology Unit, Microbiology and Virology Department, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy*

INTRODUZIONE

Respiratory infections due to human parainfluenza viruses (hPIVs) are widely underestimated and poorly studied in Italy. HPIVs cause also severe syndromes both in adults and children, moreover they circulate in all seasons of the year. The aim of present study was to investigate the epidemiology of hPIVs infections and their clinical manifestation in a hospital-based population.

METODI

A retrospective study of the circulation of different HPIV genotypes was performed analyzing all respiratory samples positive for HPIVs in the period August 2016 to August 2018. Respiratory samples were routinely tested with a panel of in-house real-time RT- PCR for detection and quantification of respiratory viruses, including HPiVs 1-4.

RISULTATI

A total of 104 (2.4% of a total) patients resulted positive for hPIVs. Of them, 67/104 (64.5%) had signs and symptoms of URTI, while 37/104 (36.5%) had signs and symptoms of LRTI. The most frequently detected genotype was hPIV-3 (96/104, 92.3%) followed by hPIV-4 (7/104, 6.1%), and hPIV-2 (1/104, 0.9%), while no cases of hPIV-1 were observed. HPIVs were detected as single infection in 80/104 (74.1%) episodes, while in 25/104 (26.1%) episodes hPIVs were detected in coinfection with at least one other pathogen (virus, bacteria and/or fungi). The most coinfecting pathogen was HRV in 8/29 (27.6%) cases followed by RSV in 5/29 (17.2%) and Aspergillus spp with 5/29 (17.2%) cases. Single infections were observed in 54/67 (80.1%) of URTIs and in 25/37 (67.5%) of LRTIs, while mixed infections were observed in 13/67 (19.4%) URTIs and 12/37 (31.6%) of LRTIs, respectively (p=0.16). Three outbreaks of HPIV-3 were observed during the study period in onco-hematological ward. Prolonged hPIV shedding (>21 days) was observed in 8 immunocompromised patients.

CONCLUSIONI

In this study hPIV infection is a considerable factor of morbidity in adults as well as in children. Seasonality showed that hPIV-3 was the most representative and widespread genotype throughout the year, with increased circulation in winter and as cause of hospital outbreaks. The introduction of multiplexed molecular panel for the diagnosis of respiratory viruses have raised the importance of non-influenza viruses, such as hPIV, also during the classical “influenza season” (Dec-Apr) as a cause of severe and/or prolonged infections. Finally, it seems to be crucial the development of new therapeutic strategies to reduce the severity of hPIVs infections.