SUPPLEMENTARY MATERIAL

Laboratory tests

During the study period, polymerase chain reaction (PCR) analyses of eight respiratory viruses (RVs) were performed at three clinical laboratories depending on period and hospital. Specimens collected from Hospitals A-I, K, and L-N for the entire study period, Hospital J from January 2013 to April 2014, and Hospital L from January 2013 to April 2016 were tested at Green Cross Co. (Yongin, Korea). Nucleic acid extraction was performed using NucliSENS easyMAG (bioMerieux, Marcy l'Etoile, France), and multiplex PCR was performed using Seeplex RV12 (Seegene, Seoul, Korea) as described previously [21,25]. Hospital J performed RV-PCR at the in-hospital clinical laboratory in May 2014. Nucleic acid extraction was performed using the MagNA Pure LC Nucleic Acid isolation kit I (Roche Diagnostics, Mannheim, Germany), and multiplex PCR was performed using the Real-Q RV Detection kit (BioSewoom, Seoul, Korea) [19]. Hospital L performed RV-PCR at the in-hospital laboratory from May 2016, using the TANBead Viral Auto Plate system (Taiwan Advanced Nanotech Inc., Taoyuan City, Taiwan) for nucleic acid extraction and the AdvanSure RV real-time PCR Kit (LG Life Sciences, Seoul, Korea) for multiplex PCR, as described previously [22].

Epidemiologic patterns of the seven RVs other than human adenovirus

Influenza virus (IFV) in the military exhibited almost the same seasonal variation as in civilians from 2013, even though the overall detection proportion was significantly lower. However, in the 2013 to 2014 period, the peak detection proportion of IFV in the military (61.6%) was similar to that of civilians (68.3%), implying an IFV outbreak in the military. Human parainfluenza virus (HPIV) was detected in the military beginning in the spring and ending in the summer, earlier than for civilians. The overall detection proportion of HPIV in the military was lower than for civilians ($p < 0.001$ from the 2013 to 2014 period). HRSV in the military began to increase in the winter, later than for civilians, and ended in the spring. Seasonal variation (late fall to spring) and detection of human coronavirus in the military were very similar to those observed for civilians starting in 2015. Human rhinovirus (HRV) in the military exhibited similar seasonality to civilians (spring to early winter), but detection proportions increased steadily from the 2013 to 2014 period (from 2.5% to 17.4%, $p = 0.001$ by linear regression). Detection proportion of HRV during the nadir of the winter season in the military also increased. Although human bocavirus (HBoV) cases were observed during the spring to summer in civilians, few cases of HBoV were detected in the military. Human metapneumovirus exhibited similar seasonality in the military as in civilians, increasing from late winter to spring.

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