Epidemiology and Clinical Characteristics of Parainfluenza Virus Type 4 in Korean Children: A single-center study, center 2015, 2016
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BACKGROUND

Human parainfluenza viruses (HPIVs) are among the most common causes of respiratory tract infections in children. Four HPIV types have been identified. Most studies of HPIVs have focused primarily on types 1-3. Owing to the difficulties of cell culture isolation and its absence from the routine panels of respiratory virus antigen detection in most clinical virology laboratories, little is known about the epidemiology and clinical characteristics of HPIV type 4.

OBJECTIVES

This study was performed to identify the epidemiology and the clinical characteristics of human parainfluenza virus type 4 (HPIV-4) infection compared to HPIVs 1-3 infections in Korean children.

METHODS

Subject
- Patients < 18 years of age who visited Seoul National University Children's Hospital with respiratory symptoms between January 2015 and December 2017.
- Patients with parainfluenza virus detected by multiplex reverse transcription polymerase chain reaction from nasopharyngeal aspirates.
- Patients who had underlying medical conditions such as chronic respiratory disease, immunodeficiency, congenital heart disease, neuromuscular disease or concurrent viral infections were excluded.

Virus detection
- Multiplex real-time RT PCR
- 01/2015-11/2015: Seeplex RV12 ACE detection kit (SeeGene, Seoul, Korea)
- 12/2015-12/2017: Anyplex II RV16 detection kit (SeeGene, Seoul, Korea)

RESULTS

Epidemiology
- Of 12,539 nasopharyngeal aspirates (472 (6.5%) were positive for HPIVs
- HPV-1 87 (38.4%), HPV-2 28 (18.6%), HPV-3 180 (38.1%), HPV-4 117 (24.8%)
- HPV-4 was prevalent in August to September in 2015 and in June 2017
- Co-infections
- Rhinovirus was the most common virus in all cases

Co-infections
- Rhinovirus was the most common virus in all cases

CONCLUSION

We observed seasonal peak in HPV-4 from late spring to autumn in 2015 and 2017. During these two seasons, HPV-4 was frequently responsible for hospitalization from lower respiratory tract infections in Korean children.

REFERENCES