

Clinical and Epidemiological Characteristics of Human Parainfluenza Virus Infection of Children in Southern Taiwan during 2012-2014

Kai Wen Wu^{1*}, Ching-Fen Shen¹, Tzong-Shiann Ho², Shih-Min Wang², Jen-Ren Wang³,
Ching-Chuan Liu¹

¹ Departments of Pediatrics, National Cheng Kung University and Hospital, Tainan City, Taiwan, ² Departments of Emergency Medicine, National Cheng Kung University and Hospital, Tainan City, Taiwan, ³ Departments of Medical Laboratory Science and Biotechnology, College of Medicine, National Cheng Kung University and Hospital, Tainan City, Taiwan

Background/Objective

Human parainfluenza viruses (HPIVs) are important causes of respiratory tract infection in children. This study was designed to evaluate the epidemiology and clinical characteristics of HPIVs infection in pediatric patients in a medical center of southern Taiwan during a period of three years.

Method

All children <18 years of age who had virologically confirmed HPIV infection from January 2012 to December 2014 were enrolled. The demographic, epidemiological, clinical, laboratory and radiological findings, management and outcomes were analyzed.

Result

Totally 402 patients with HPIV infection were identified, including 40 HPIV type 1 (10.0%), 68 HPIV type 2 (16.9%), and 294 HPIV type 3 (73.1%). Over 90% patients presented illnesses to emergency department initially. The mean duration of fever admission was 2.1 days. In 2013, the outbreak of HPIV2 occurred after June and peak in October. HPIV3 occurred throughout the year, peaked in May, June and July in 2012. The mean age of HPIV1-infected patients was 4.1 years; HPIV2-infected was 8.7 years; HPIV3-infected was 2.3 years ($P<0.05$). Among the children with HPIVs infection, 59% of them were diagnosed as upper airway infection, 17.4% as croup, and 39.6% as lower airway infection. In patients with croup, 56% were caused by HPIV2 ($P<0.05$). Most of the cases with acute bronchiolitis were caused by HPIV3 ($P<0.05$). Two fatal cases were associated with HPIV3 myocarditis.

Conclusion

This study showed clinical and epidemiologic features of HPIVs infections in children. HPIV2 was the most common type resulted in croup. HPIV3, was the leading cause of bronchiolitis in young children, and may associate with fatal outcome.