at a reduced risk of shingles. Alberta has a publicly funded healthcare system and added publicly funded varicella vaccine to the routine childhood vaccination schedule in 2001.

**Methods.** We used provincially held administrative health databases to examine the epidemiology of incident shingles cases in children under the age of 19. Incident shingles cases were defined as the earliest record of ICD-9-CM 053 OR ICD-10-CM B02 coded physician claims, hospital, or emergency room visits between 1985 and 2016, with incident cases in this cohort occurring between January 1, 2016 and December 31, 2016. Varicella immunization was identified through Alberta's immunization registry and was verified by other parameters such as antibody titers. Predictors included history of hepatitis C virus (HCV), other immunocompromising conditions (such as neoplasms, HIV/AIDS, cystic fibrosis, and immune system disorders) were identified using ICD diagnostic codes from physician claims, hospital, or emergency room visits and Alberta's Communicable Disease Control databases.

**Results.** 1,003 incident shingles cases were identified in children under the age of 19 in 2016, a crude rate of 0.98/1,000 persons. Females comprised 54% of cases. The largest proportion of cases occurred among those aged 15–19 years. About 39% of cases were prescribed antiviral medication, most commonly those aged 15–19 years. The crude rate per 1,000 population increased with age: 0.5 for children under the age of 1, 1.2 for those 1–4 years, 1.25 for children 5–9 years, 2.19 for children 10–14 years, and 3.7 for children aged 15–19 years. Crude rates were similar among both males and females. Less than 3% of the cases had ever been immunized against varicella. Shingles diagnoses were not validated, which likely led to an overestimation of the true rates of disease.

**Conclusion.** Additional studies are needed on pediatric shingles cases and factors that influence shingles in this group, as well as validation studies of ICD diagnostic coding in administrative data.

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**2515. Impact of Human Parainfluenza Virus Type 4 in Hospitalized Children in Korea**

**Background.** Human Parainfluenza Virus type 4 (hPIV4) was not thought as the important pathogen of respiratory tract infection so that the characteristics of hPIV4 has not thoroughly elucidated.

**Methods.** From 2013 to 2016, children who were admitted with respiratory tract infection at the department of pediatrics in Chung-Ang University hospital were enrolled in this study. Nasopharyngeal aspirates (NPAs) were obtained from patients with respiratory tract infection and tested for hPIV types by commercial multiplex reverse transcription polymerase chain reaction (mRT-PCR) assay. We retrospectively reviewed subjects' medical records, focusing on their epidemiological and clinical characteristics.

**Results.** Of all NPAs, 943 were positive to hPIV. Of hPIV-positive NPAs, 220 were positive for hPIV4. 107 patients (48.6%) were male and median age at admission was 2.1 ± 1.7 years (range, 0.2–12.7 years). 215 (97.7%) children did not have an underlying disease. Of 5 children who had underlying diseases, one had asthma, the other had ventricular septal defect, and others had epilepsy. 173 children (78.4%) had a fever and fever duration was 4.1 ± 2.4 days. Their peak temperature was checked as 39.0 ± 0.7°C. The most common symptom of hPIV4 infected patients was cough (80.9%) followed by sputum (60.0%) and rhinorrhea (59.1%). Only six patients had barking cough. Of 6 patients, two had hoarseness and only one patient had stridor with chest wall retraction. The most common diagnosis of hPIV4 was pneumonia (44.5%), followed by acute bronchilitis (25.0%) and acute pharyngitis (22.3%). Only 2.3% patients were expressed as croup. The prevalence among hPIV types were the temporal trends of hPIV types, the most common type was hPIV3 in 2013, hPIV1 in 2014, hPIV4 in 2015, and hPIV1 in 2016. Single infection rate of hPIV4 were 40.5% which were lowest among other parainfluenza virus types (61.1% for hPIV1, 57.6% for hPIV3, 53.5% for hPIV2, and 53.5% for hPIV3).

**Conclusion.** The prevalence of hPIV4 was common, compared with those of other hPIV types. Although hPIV4 was usually co-infected with other respiratory viruses, hPIV4 was the important pathogen of lower respiratory tract infection in pediatric patients. Thus, we considered that the detection of hPIV4 by mRT-PCR were needed in pediatric patients.

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