

# Poor Infection Control an Issue in H1N1 Cases

BY HEIDI SPLETE

None of 26 health care workers infected with the novel influenza A (H1N1) virus fully followed the Centers for Disease Control and Prevention's recommended infection control practices, based on data from the CDC's Morbidity and Mortality Weekly Report presented at a press briefing on June 18.

"The single most important thing is that infectious patients be identified at the front door," said Dr. Michael Bell of the CDC's National Center for Preparedness, Detection, and Control of Infectious Diseases. "Identifying them up front is essential to let health care personnel know that they should be doing the things that we recommend," he said.

The CDC investigators determined that 13 (50%) of the 26 cases were contracted in health care settings, with 12 cases of transmission from patients to health care providers and 1 case of transmission from one health care provider to another.

A total of 11 providers of the 12 cases of patient-to-provider transmission reported their use of protective equipment when caring for a patient infected with the H1N1 virus. None reported always using gloves, gowns, and either a mask or an N95 respirator. Only three said they always wore a mask or N95 respirator, five said they always wore gloves, and none said they used eye protection.

The CDC's recommendations for health care personnel include staying home when ill; washing hands frequently; and using protective gear including surgical masks, N95 respirators, gloves, and surgical gowns, as well as eye protection.

The results suggest that health care providers aren't over-represented among reported cases of the H1N1 virus so far. The data emphasize the need for health care facilities to adhere to infection control recommendations, identify and triage potentially infectious patients, provide infection control resources, and train staff in infection control practices, the CDC researchers noted.

The study was limited by several factors, however, including potential recall bias, the small number of cases, and the lack of information about several infection control practices, including hand hygiene.

Data on additional cases in health care providers are under review, Dr. Bell said.

The complete report on the novel influenza A (H1N1) cases in the 26 health care workers will be available in the CDC's June 19 Morbidity and Mortality Weekly Report (2009;58:641-5).

Transmission of the H1N1 virus in the United States is expected to continue throughout the summer and increase in the fall, Dr. Daniel Jernigan, a medical epidemiologist in the CDC's Influenza Division, said during the briefing.

The CDC has posted H1N1 guidance for summer camps on its Web site, Dr. Jernigan said. "It's important than aspirin not be used in children with influenza-like illness," he added, because of the potential for complications. ■

## SLE Tied to Higher Risk of HPV Infection

BY DOUG BRUNK

The rate of cervical human papillomavirus infection among women with systemic lupus erythematosus increased from 12% to 25% after 3 years, judging from results from a novel study presented at the annual European Congress of Rheumatology.

Moreover, patients were twice as likely to acquire high-risk HPV infection than low-risk HPV infection.

"Information about the natural history of HPV infection in SLE is lacking," lead investigator Dr. Lai-Shan Tam said in an interview. "Whether immunosuppression related to SLE itself and/or the use of immunosuppressants would result in an increased incidence and risk of persistent HPV infection has never been studied."

Dr. Tam and her associates evaluated 144 women with SLE at 6-month intervals for up to 3 years. During each visit, a Pap test, a test for HPV DNA, and a clinical assessment were performed in an effort to ascertain the incidence, clearance, and persistence of HPV infection. The mean age of the patients was 41 years, and mean disease duration was 8.6 years. The total duration of follow-up was 4,006 patient-months.

The cumulative prevalence of HPV infection increased from 12% at baseline to 25% after 3 years, and 19% of patients experienced a total of 69 incident infections, reported Dr. Tam of the department of medicine and therapeutics at the Chinese University of Hong Kong. The researchers also observed a twofold increase in the overall incidence of high-risk HPV infection, compared with the low-risk type (11.6 per 1,000 patient-months vs. 5.4 per 1,000 patient-months, respectively).

"Other studies on healthy women found that 19%-38% of those [who]

tested positive for HPV harbored multiple HPV types," Dr. Tam said. "Such prevalence is much lower than that observed in our lupus cohort (65%)."

She went on to note that other studies on the natural history of cervical HPV infection in healthy subjects showed that most incident infections were transient, lasting less than 6 months. In contrast, the rate of persistent infection in this cohort of SLE patients appeared increased (49%).

The cumulative prevalence of multiple HPV infection also increased sig-



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nificantly (10/145 [6.9%] at baseline to 25/145 [17.2%] after 3 years,  $P = .007$ ). The most common newly acquired high risk viral type was HPV-16 and -52 (1.7 per 1,000 patient-months), followed by HPV-18, -56 and -58 (1.2 per 1,000 patient-months).

In all, 20 out of 145 (13.8%) patients experienced at least one episode of persistent infection. The majority (overall infection: 34/69 [77.3%]; high-risk HPV: 23/30 [76.7%]; low-risk: 11/14 [8.6%]) of the incident HPV infections persisted for at least 6 months. Overall, 11/37 (29.7%) patients were able to clear all HPV infections.

Regarding the type-specific infections, the cohort participants cleared 33/38 (86.8%) of the pre-existing infections and 14/44 (31.8%) of all the incident infections.

The researchers also noticed that patients with high inflammatory burden as reflected by a SLICC/ACR (Sys-

temic Lupus Erythematosus International Collaborating Clinics/American College of Rheumatology) Damage Index score of 1 or greater were at higher risk of acquiring HPV infection, after adjustment for the known risk factors as well as the use of immunosuppressants.

"In other reports of healthy young females, infection with high-risk types and multiple infections were risk factors for persistent infection," Dr. Tam said. "In contrast, lupus patients with any HPV infections at baseline are at risk of having persistent infection regardless of risk type." Independent risk factors associated with persistent HPV infection in SLE included preexisting HPV infection ( $P = .04$ ) and multiple HPV infection during first incident infection ( $P = .02$ ).

Independent risk factors associated with incident HPV infection included younger age at first sexual intercourse ( $P = .025$ ; odds ratio, 0.868; 95% confidence interval, 0.766-0.983) and baseline SLICC=1 ( $P = .038$ ; OR, 2.619; 95% CI, 1.054-6.508).

Independent risk factors associated with persistent HPV infection included pre-existing HPV infection at baseline ( $P < .001$ ; OR, 89.47; 95% CI, 9.25-865.28) and multiple HPV infection during first incident infection ( $P < .001$ ; OR, 188.11; 95% CI, 19.04-1858.42).

She acknowledged certain limitations of the study, including the lack of a healthy control group and the fact that most of the patients in the study did not belong to the age group at highest risk for HPV.

The study was commissioned by the Food and Health Bureau of the Hong Kong SAR government, and was funded by the Research Fund for the Control of Infectious Diseases. This study was also supported by a Chinese University of Hong Kong research grant. ■

## Cefepime Deemed Appropriate for Select Indications

BY LORINDA BULLOCK

A review of data on cefepime indicates that the antibiotic is appropriate for its approved indications, despite earlier concerns that it may have been associated with an increase in mortality risk compared with other agents in its class, the U.S. Food and Drug Administration announced last month.

Cefepime, a cephalosporin antibiotic, is approved for the treatment of a variety of infections because of its extended spectrum of activity against Gram-positive and Gram-negative bacteria.

Cefepime's safety was determined based on the findings from trial-level and patient-level meta-analyses, "neither of which showed a statistically significant difference in mortality with cefepime," the announcement said.

The FDA began reviewing safety data on cefepime (Maxipime) in November 2007, and compared mortality data with other beta-lactam antibacterials. A 38-trial meta-analysis published by Dr. Dafna Yahav and colleagues at the Rabin Medical Center in Israel, indicated a 1.26 risk ratio for 30-day all-cause mortality among patient taking cefepime compared with those taking other beta-lactam antibacterials.

In the FDA's follow-up investigation that involved additional data from the agent's manufacturer, Bristol-Myers Squibb, data on 50 more trials were analyzed along with the initial 38 trials in Dr. Yahav's meta-analysis. All-cause 30-day post-therapy mortality rates were 6.2% for the 9,467 cefepime-treated patients and 6.0% for the 8,288 patient treated with comparison antibiotics, a difference that was not statistically significant.

According to the announcement, the FDA is continuing its investigation of cefepime and its potential mortality risk, using hospital drug utilization data. A separate investigation of this association has been requested of Bristol-Myers Squibb. The results of these analyses are not expected for at least 1 year, according to the FDA. ■