Diagnostic Wrinkles Anticipated in Pandemic Flu

BY BRUCE JANCIN

VAIL, COLO. — Recent anecdotal reports suggest that the diagnosis of novel influenza A(H1N1) should not be ruled out by a negative upper respiratory tract specimen in a patient with pneumonia.

There have been two patients at Albany (N.Y.) Medical Center and one in Denver who were hospitalized with severe lower respiratory tract infections whose nasopharyngeal swabs were negative for influenza A by rapid tests—but who had endotracheal aspirates positive for the novel H1N1 virus by culture and polymerase chain reaction.

"That's something to watch for. It would be consistent with findings in animal models showing the virus replicates very well in the lower respiratory tract," said Dr. Adriana Weinberg, who reported on the cases at a conference on pediatric infectious diseases sponsored by the Children's Hospital, Denver.

"As the pandemic evolves, perhaps we may see more cases with florid infection in the lower respiratory tract and not so much virus in the upper respiratory tract," said Dr. Weinberg, professor of medicine, pediatrics, and pathology and medical director of the clinical virology laboratory at the University of Colorado Hospital, Aurora.

At present, the preferred specimens for making the diagnosis of novel H1N1 are the same as for seasonal influenza: nasal washings in children and nasopharyngeal aspirates or swabs in adults. That being said, negative results on those upper respiratory tract specimens do not necessarily rule out novel H1N1 in patients with lower respiratory tract infections.

"In these patients, you may want to proceed with obtaining an induced sputum, an endotracheal aspirate, or a bronchoalveolar lavage specimen to rule out the pandemic strain," according to Dr. Weinberg.

Most diagnostic tests for seasonal influenza A or A plus B will also pick up the pandemic strain. A caveat is that the rapid tests, which in general are not terribly sensitive for the diagnosis of seasonal influenza viruses, appear to be even less sensitive for novel H1N1.

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"A positive rapid test indicates you may be dealing with the pandemic strain, but a negative test does not rule out pandemic influenza. However, culture and PCR [polymerase chain reaction] are extremely sensitive for this strain," she continued.

The Centers for Disease Control and Prevention has acted quickly in preparing tools for the diagnosis of novel H1N1. Regular PCR and culture cannot differentiate between seasonal influenza A and the novel H1N1 strain. But just 2 weeks after the first U.S. case of novel H1N1 disease was diagnosed in April, the CDC began sending out to U.S. sentinel laboratories PCR kits that are highly specific for the virus. Less than 2 months later, those kits were on-site at 233 U.S. laboratories, including all state health department laboratories, and at 386 international laboratories.

In addition to many more patients with novel H1N1 presenting with lower respiratory tract infection than physicians are accustomed to encountering with seasonal influenza, physicians can also expect to see lots more patients with a prominent gastrointestinal presentation, she said. Animal studies suggest that the pandemic strain replicates much better in the GI tract than do seasonal influenza viruses, and that has been borne out in the first 400 U.S. cases of novel H1N1.

More than 90% of those patients presented with fever and cough, and two-thirds had a sore throat—all typical of seasonal influenza—but in addition, 25% presented with diarrhea and 25% had vomiting. ■

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