CORRESPONDENCE

Influenza A(H5N1) Virus Infection in Two Dairy Farm Workers in Michigan

TO THE EDITOR: In March 2024, a highly pathogenic avian influenza (HPAI) virus of A(H5N1) clade 2.3.4.4b was identified in lactating dairy cow herds in the panhandle region of Texas. As of August 1, 2024, a total of 175 herds in 13 states have been affected.[1] In March 2024, a dairy farm worker in Texas had onset of conjunctivitis from infection with HPAI A(H5N1) clade 2.3.4.4b (genotype B3.13) after working with sick cows.[2] In May 2024, two adult dairy farm workers (designated as MI-A and MI-B) in Michigan were identified as having HPAI A(H5N1) virus infection.

Dairy worker MI-A had discomfort in the right eye 1 day after milk had splashed in that eye while the worker was milking a cow at a farm that had confirmed HPAI A(H5N1) in dairy cows. The worker had not been using personal protective equipment. Examination on the day after symptom onset revealed mildly erythematous conjunctiva, consistent with conjunctivitis in the right eye; the left eye was unremarkable.

Nasopharyngeal and conjunctival swab specimens were obtained from the right eye 1 day after symptom onset. The nasopharyngeal swab specimen that was tested at the Michigan Department of Health and Human Services (MDHHS) Bureau of Laboratories was negative for influenza viruses according to reverse-transcription–polymerase-chain-reaction (RT-PCR) testing, and a BioFire FilmArray Respiratory Panel was positive for coronavirus 229E. The conjunctival and nasopharyngeal specimens were tested at the Centers for Disease Control and Prevention (CDC), where RT-PCR testing of the conjunctival specimen was positive for influenza A(H5) (cycle threshold [Ct] value, 28), and the virus was later identified as HPAI A(H5N1); the nasopharyngeal swab specimen was negative. A conjunctival swab specimen that was obtained 1 week later was negative for influenza viruses.

Dairy worker MI-B, who was from a separate farm, had onset of cough, shortness of breath, headache, sore throat, fatigue, nasal congestion, and rhinitis. The symptoms were the most severe on days 3 and 4 of illness, and the worker presented to a local urgent care clinic. No influenza virus testing was performed, and no treatment was prescribed. Signs of illness in dairy cows at the farm were observed 1 day before onset of the worker's illness, and HPAI A(H5N1) virus infection was confirmed in the dairy cows 1 week later. This worker's duties involved caring for ill cows, including administering oral fluid therapy ("drenching," which typically involves direct handling of oral secretions). The worker used eye protection and gloves but did not use a respirator or a mask.

Examination on day 8 of illness showed that the lungs were clear to auscultation, and the oxygen saturation was 98% while the patient was breathing ambient air. Chest radiography showed no acute abnormalities. Home isolation and treatment with oral oseltamivir (75 mg twice daily for 5 days) were initiated. The symptoms abated

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within 24 hours after initiation of treatment. A nasopharyngeal swab specimen that was tested with the use of RT-PCR at MDHHS Bureau of Laboratories and the CDC was positive for influenza A(H5) (Ct value, 33); the virus was identified as HPAI A(H5N1) by the CDC. Conjunctival and oropharyngeal specimens were negative for influenza viruses. Additional information, including viral sequencing data for the two patients, is provided in the Supplementary Appendix, available with the full text of this letter at NEJM.org.

These two HPAI A(H5N1) virus infections in dairy farm workers highlight the ongoing risk of transmission through direct and close exposure to raw milk and secretions from infected dairy cows.

Jennifer Morse, M.D., M.P.H.
Mid-Michigan District Health Department
Stanton, MI
jmorse@mmdhd.org

Joseph Coyle, M.P.H.
Michigan Department of Health and Human Services
Lansing, MI

Lisa Mikesell, R.N.
Becky Stoddard, R.N.
Mid-Michigan District Health Department
Stanton, MI

Seth Eckel, M.P.H.
Meghan Weinberg, Ph.D., M.P.H.
Jeremy Kuo, M.P.H.
Diana Riner, Ph.D.
Katie Margulieux, Ph.D.
Jalen Stricklen, B.S.
Matthew Dover, B.S.
Michigan Department of Health and Human Services
Lansing, MI

Krista L. Kniss, M.P.H.
Yunho Jang, Ph.D.
Marie K. Kirby, Ph.D.
Julia C. Frederick, Ph.D.
Kristine A. Lacek, M.S.
C. Todd Davis, Ph.D.
Timothy M. Uyeki, M.D., M.P.H.
Centers for Disease Control and Prevention
Atlanta, GA

Sarah Lyon-Callo, Ph.D.
Natasha Bagdasarian, M.D., M.P.H.
Michigan Department of Health and Human Services
Lansing, MI

A complete list of authors is available with the full text of this letter at NEJM.org.

The findings and conclusions in this letter are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Disclosure forms provided by the authors are available with the full text of this letter at NEJM.org.

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1. USDA Animal and Plant Health Inspection Service. Detections of highly pathogenic avian influenza (HPAI) in livestock. July 31, 2024 (https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections/livestock).
2. Uyeki TM, Milton S, Abdul Hamid C, et al. Highly pathogenic avian influenza A(H5N1) virus infection in a dairy farm worker. N Engl J Med 2024;390:2028-9.

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Self-Expanding or Balloon-Expandable TAVR with a Small Aortic Annulus

TO THE EDITOR: In their article on the Small Annuli Randomized to Evolut or SAPIEN Trial (SMART), Herrmann and colleagues (June 6 issue)[1] report the results of a head-to-head comparison of the self-expanding valve and the balloon-expendable valve in patients with aortic stenosis and a small aortic annulus (<430 mm^2) who were undergoing transcatheter aortic-valve replacement (TAVR). Although the finding of no significant difference in clinical outcomes between these two valve platforms is reassuring, some caution is needed when interpreting the results. Although patients with a small aortic annulus represent up to 40% of the population of patients undergoing TAVR, only 716 patients from 83 high-volume centers were enrolled in the SMART trial over a 17-month period — approximately 6 patients per center per year. In addition, mortality at 30 days and at 1 year (2% and 6%, respectively) were approximately half the values reported in recent national registries (3 to 7% and 13 to 20%, respectively[2-4]). This finding suggests that the highly selective inclusion process may have biased enrollment toward a much lower-risk patient population than that encountered in current clinical practice. Larger studies targeting all-comer patients that are conducted independently from