

Abstract Number: 2267

Pres No: LB-46 - Oseltamivir-Resistant 2009 Pandemic H1N1 Infection among Summer Camp Attendees Receiving Oseltamivir Prophylaxis – North Carolina, 2009

11/01/2009, 08:45-10:45

113-ABC

NATALIE JM DAILEY, MD^{1,2}, ZACK MOORE, MD, MPH², AARON FLEISCHAUER, PhD, MPH^{1,2}, MICHELLE GARRISON, RN³, LINDA WELDON, RN⁴, PEGGY BRANTLEY, MLT², LESLIE WOLF, PhD², JEAN-MARIE MAILLARD, MD, MSc², TIFFANY G. SHEU, BS¹, VAROUGH M. DEYDE, MS, PhD¹, LARISA V. GUBAREVA, MD, PhD¹, ALICIA M. FRY, MD, MPH¹;

¹CDC, Atlanta, GA, ²NC Dept. of Health and Human Services, Raleigh, NC, ³Buncombe County Health Ctr., Asheville, NC, ⁴Henderson County Dept. of Public Health, Hendersonville, NC.

Background:

Almost all strains of 2009 pandemic H1N1 tested have been sensitive to neuraminidase inhibitors (NAIs) (oseltamivir and zanamivir) and resistant to adamantanes. NAIs therefore have been used extensively for chemoprophylaxis and treatment. During an outbreak of 2009 pandemic H1N1 at a summer camp in North Carolina, 65 ill campers and staff were treated with oseltamivir. Approximately 600 campers and staff received oseltamivir chemoprophylaxis. We report confirmed 2009 pandemic H1N1 with oseltamivir resistance in two cabin mates from this camp.

Methods:

Records from the camp were reviewed, and patients queried regarding illness onset, family illness, and medications. Clinical specimens were tested by pyrosequencing to detect H275Y, a mutation that confers resistance to oseltamivir, and neuraminidase (NA) sequencing.

Results:

Two previously healthy females experienced clinical influenza symptoms after starting oseltamivir chemoprophylaxis on June 26 (Case 1) and July 7 (Case 2). Symptom onset was July 8 and July 11, respectively. On August 14 and 19, CDC detected the H275Y mutation and a second mutation, I223V, in NA from respiratory specimens from both campers. Neither NA mutation was detected in 59 specimens collected in North Carolina during June 29-August 14.

Conclusion:

This is the first report describing cases of oseltamivir resistance among close contacts. Because developing two mutations independently in each of these contacts is very unlikely, the two mutations indicate transmission of resistant virus. These cases highlight potential for emergence and spread of oseltamivir-resistant strains of 2009 pandemic H1N1 among persons receiving chemoprophylaxis. Appropriate use of antiviral chemoprophylaxis only in those at highest risk for influenza complications, including pregnant women, children <5 years, adults ≥65 years, and those with certain chronic medical conditions, will reduce risk for such events.

Disclosures: N. J. Dailey, None. Z. Moore, None. A. Fleischauer, None. M. Garrison, None. L. Weldon, None. P. Brantley, None. L. Wolf, None. J. Maillard, None. T. G. Sheu, None. V. M. Deyde, None. L. V. Gubareva, None. A. M. Fry, None.