

ISOLATION AND CHARACTERIZATION OF A NOVEL H1N2 SWINE INFLUENZA VIRUS IN PIGS IN BRAZIL DERIVED FROM THE PANDEMIC H1N1/2009 VIRUS

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In 2010 the first detection of pandemic H1N1/2009 influenza virus in pigs was described in Brazil. Since then, outbreaks of respiratory disease in pigs suggestive of influenza virus infection have been frequently observed in Brazilian pig herds. In January 2011, an outbreak of acute respiratory disease was detected in nursery pigs in Parana state, Brazil. Samples were collected from nursery pens that use a multi-origin system, in which pigs born in 23 sow farms are weaned at 28 days-old and moved to eight nursery pens. A total of seven lung samples from pigs from four nursery pens were examined. The affected pigs with ages ranging from 35 to 50 days-old showed cough, nasal discharge and anorexia. High morbidity, followed by low mortality and partial response to antibiotic therapy was also observed. Five out of seven lung samples were positive for influenza A by the amplification of the matrix (M) gene by RT-PCR. Influenza virus was isolated from two lungs, later confirmed by the hemagglutination test and RT-PCR. Nucleotide sequencing of the complete hemagglutinin gene (HA) and partial neuraminidase (NA), matrix (M), nucleoprotein (NP) and viral polymerase genes (PB1, PB2 and PA) were performed. The sequence analysis of the isolated virus revealed that the H1 and N2 genes were of contemporary human influenza viruses and the M, NP, PB1, PB2 and PA genes were derived from the pandemic 2009 H1N1 influenza virus which has been circulating in pigs in the last two years in Brazil. This is the first evidence of a reassortant H1N2 influenza virus isolated in pigs in Brazil and underscores the need to increase the very limited amount of information on the prevalence of influenza virus infections in Brazilian swine.

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