

1482. Sentinel Surveillance of Respiratory Viral Pathogens in Border Areas of Western Cambodia

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Background. Little information is available about influenza and other common respiratory viruses in border populations in Western Cambodia, a region with relatively high incidence and highest mortality rate of H5N1 and future pandemic potential.

Methods. This out-patient surveillance system complements national surveillance using the same influenza-like-illness (ILI) case definition: > 1 years of age, fever (axillary $\geq 38.1^{\circ}\text{C}$), cough or sore throat, and fever onset within last five days without other diagnosis. Influenza real-time PCR was performed on combined nasal and throat swabs at 4 sentinel sites between May 2010 and December 2012. A subset of positive cases underwent antigenic analysis and antiviral susceptibility testing. All influenza PCR-negative ILI-specimens were cultured; a subset of culture-negative cases collected between May 2010 and April 2012 underwent RT-PCR for enteroviruses (EV), rhinoviruses (RV) and EV71.

Results. Among 586 ILI-patients (median age 5, 1-77 years), at least one respiratory virus was detected in 258 (44%) volunteers; 168 (29%) were positive by influenza PCR- 92 (55%) were flu A and 76 (45%) flu B. Among flu A, 48 (52%) were A/pH1N1, 43 (46%) A/H3N2 and one A/pH1N1 + B. Sixteen flu B isolates were B/Brisbane/60/2008 and four B/Malaysia/2506/2004. All 20 flu A and 16 flu B isolates tested were susceptible to oseltamivir and zanamivir. Influenza cases occurred almost exclusively in rainy season from June to November; vaccination coverage in 2010 and 2011 was ~ 20% responding to A/pH1N1(2009) pandemic and was zero in 2012 among study subjects. Viral culture of 418 flu-PCR negative specimens detected adenovirus (5.7%), parainfluenza (3.8%), with no evidence of respiratory syncytial virus, metapneumovirus, coronavirus, or bocavirus. EV/RV RT-PCR detected 5.9% non-polio EV among 164 culture-negative specimens: coxsackievirus A4, A6, A8, A9, A12, B3, B4 and echovirus E6 and E9; no EV71 was found.

Conclusion. Influenza epidemiology in this sentinel surveillance showed similar trends as observed elsewhere in Cambodia. Ongoing surveillance for respiratory viruses including influenza and further research to clarify adenovirus and non-polio EVs as etiologic agents for acute respiratory infections is needed in Cambodia.

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