



Military Study Shows Prevention of novel A/H1N1 Virus Infection is Vaccine-Type and Age-Dependent

Both Live, Attenuated Influenza Vaccine (LAIV) and Trivalent Inactivated Vaccine (TIV) provide Protection against novel A/H1N1, especially against severe disease

WASHINGTON, Nov. 19, 2009 – Immunization with either live attenuated influenza vaccine (LAIV, also known as FluMist®), or trivalent inactivated influenza vaccine (TIV), appears to offer a protection (~ 45%) against the novel A/H1N1 virus, the cause of the present influenza pandemic. However, the benefit was largely attributed to the youngest age group. The finding emerges from an evaluation of medical encounters and seasonal influenza immunization of U.S. military service members.

As reported today in a Late-Breaker presentation at the 58th annual meeting of the American Society of Tropical Medicine and Hygiene (ASTMH), seasonal influenza vaccination also appears to offer higher protection against severe disease requiring hospitalization (~ 62%, 95% confidence interval [CI], 14% to 84%) than against milder infections that can be treated on an outpatient basis (~ 42%, 95% CI, 29% to 53%).

“The increasing momentum of the H1N1 pandemic underscores the need for vaccination, yet there is a wide variance in vaccine effectiveness depending on the strain-match for a particular season,” comments Col. (Ret.) Jose L. Sanchez, MD, MPH, of the Armed Forces Health Surveillance Center (AFHSC) in Silver Spring, Maryland.

Dr. Sanchez and colleagues conducted a case control analysis of influenza-related medical encounter data of U.S. military service members, compared to a control group of personnel with acute, non-respiratory illnesses. For the period of April-October 2009, a total of 1,205 cases of pandemic H1N1 2009 infections were reported, of which 966 (80%) were among males and more than one-half (58%) were among those younger than 25 years. The overall vaccine effectiveness (VE) for service members was found to be 45% (95% confidence interval [CI], 33% to 55%). Immunization with prior season’s TIV (VE=37%; 95% CI, 23% to 49%) as well as LAIV (VE=22%; 95% CI, 1% to 38%), were found to be protective.

Interestingly, and unexpectedly, the investigators observed a U-shaped relationship of VE with age stratification. VE was high in the youngest (< 25 yo) and oldest (> 39 yo) service members (50% and 55% respectively), while there was noVE for those 25 to 39 years of age.

“These data highlight the need for concise, timely assessments of influenza vaccine effectiveness against the new A/H1N1 as well as seasonal strains,” notes Thomas Wellems, MD, PhD, president of ASTMH. “Although the United States military constitutes a highly immunized population that may not be generalizable to civilians, it offers unique cohorts of at-risk individuals that can be studied in randomized clinical trials. We look forward to further data from this population.”

“These findings suggest that while prior season’s influenza vaccine may not prevent infection or developing illness once infected, it certainly appears to protect against more severe outcomes. We may also be seeing a cross-protective effect resulting from natural influenza infections and/or prior influenza immunization in the military setting,” says Dr. Sanchez. “This may play a role in conferring a certain degree of ‘immunological priming.’”

“Continued timely assessment of influenza vaccine effectiveness among military personnel is a top priority for us at the AFHSC. At the very least, our results will assist health officials in the military and Department of Defense in guiding future policy on seasonal and novel A/H1N1 vaccine use among military service members and dependents.” Dr. Sanchez concludes.

About the ASTMH

The American Society of Tropical Medicine and Hygiene (ASTMH), founded in 1903, is a worldwide organization of scientists, clinicians and program professionals whose mission is to promote global health through the prevention and control of infectious and other diseases that disproportionately afflict the global poor.

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