

At The Annual Conference of the Japanese Society For Vaccinology held in Sapporo, Japan on September 27, 2009, Dr. Hideki Hasegawa of National Institute of Infectious Diseases was scheduled to give the following presentation:

<Abstract>

“Formulations and Efficacy of the Influenza Vaccine administered intranasally”

Hideki Hasegawa, M.D. Ph.D.

National Institute of Infectious Diseases, Tokyo

Objectives and Significance

The important way for the prevention of influenza virus will be the mucous immunity such as IgA on the infected site. If we want to induce the mucous immunity, the intranasal vaccine shall be effective. In the present study, the avian influenza vaccine administered intranasally was studied with regards to its efficacy, a volume of adjuvant as well as the mucous viscosity enhancer.

Materials and Method

Formalin-inactivated whole virion H5N1 vaccine was used. Double stranded RNA, Ampligen®(poly I:polyC12U) was used as an adjuvant because its safety in human has been confirmed. Vaccine antigen and adjuvant Ampligen® were mixed at the rate of 1:10 and 1:20. The vaccine formulation which also includes an viscosity enhancer, was administered in monkeys (cynomolgus macaques).

Results

By the intranasal administration of H5N1 vaccine combined with an adjuvant, specific IgG and IgA antibodies were induced in all monkeys. When the immunogen was fixed, the increased adjuvant concentration 1:20 was demonstrated to produce more potent antibody response. In addition, when a viscosity enhancer was employed into the formulation, a higher concentration of the viscosity enhancer was found to increase IgA. But there was no significant difference with IgG.

Discussions

Avian influenza vaccine mixed with adjuvant and viscosity enhancer was administered in monkeys (cynomolgus macaques) which are known to have a wide nostril as human. When a higher volume of an adjuvant and viscosity enhancer were administered in monkeys intranasally, the mucosal immunogenicity were enhanced. This formulation is expected to demonstrate the cross protection against the mutated strain, so that this can be useful for the prevention of influenza virus in the future.