News

Fluzone High-Dose Vaccine Is Significantly More Effective Than the Standard Dose of Fluzone Vaccine in Preventing Influenza in Adults ≥65 Years of Age

26 August 2013 (press release, Sanofi Pasteur)—Sanofi Pasteur today announced topline results of a large-scale, multicenter efficacy trial in people ≥65 years of age showing a superior clinical benefit of Fluzone High-Dose (influenza virus vaccine) relative to the standard dose of Fluzone vaccine in preventing influenza.

Further data analyses of secondary endpoints are ongoing, including an evaluation of the relative efficacy based on the match of the vaccine strains to circulating influenza virus strains. Sanofi Pasteur anticipates submitting the full clinical study report to the Food and Drug Administration for review by early 2014 and will seek a modification to the label for Fluzone High-Dose vaccine reflecting the superior efficacy data in adults ≥65 years of age.

In the study, Fluzone High-Dose vaccine was 24.2% more effective in preventing influenza in adults ≥65 years of age than was the Fluzone vaccine. The study results suggested consistent clinical benefit across the study years, influenza virus types, clinical illness definitions, and laboratory methods of influenza confirmation.

Fluzone High-Dose vaccine contains 60 µg of hemagglutinin antigen per strain of influenza virus in the vaccine as compared to 15 µg of influenza virus hemagglutinin antigen per strain of influenza virus in the standard dose of Fluzone vaccine. Sanofi Pasteur embarked on this large-scale, 2-season, confirmatory efficacy trial, involving more than 30000 participants ≥65 years of age, to evaluate the clinical benefit of Fluzone High-Dose vaccine compared to Fluzone vaccine in the prevention of influenza disease.

Editorial comment. This study clearly suggests that the high-antigen trivalent vaccine is superior to the lower-antigen trivalent vaccines for those aged ≥65 years. More information will be needed to fully evaluate the superiority of the vaccine, for example, whether it results in a decrease in hospitalizations or a decrease in mortality with the high-antigen vaccine. Separately, some newer vaccines are quadri-antigenic, containing a second strain of B virus. It seems likely that the best vaccine for the elderly would be a quadri-antigenic high-antigen vaccine, which is not available.

Status Report: Middle East Respiratory Syndrome

(Prepared by the Section Editor)—Middle East respiratory syndrome (MERS) coronavirus was first identified in a man who died in Saudi Arabia in June 2012. Since then, as of the end of August 2013, there have been 108 confirmed cases worldwide with 51 deaths (47%). The illness has been severe in the elderly and in those with comorbidities and generally mild or even asymptomatic in the young and those without comorbidities. Therefore, it is likely that there are many mild or asymptomatic cases that go undetected, resulting in a lower true mortality rate.

Most of the cases that have occurred were connected to Saudi Arabia, with 84 cases including 43 deaths (51%). All of the other cases have been connected to other Arabian Peninsula countries. The intermediate animal host remains unknown, but bats are almost certainly involved as the original host. Person-to-person spread can occur with close contact and has been particularly frequent among healthcare workers within healthcare facilities.

In October of 2013, millions of Muslims from within and from outside Saudi Arabia will converge on Mecca for the Hajj. Although there are obvious concerns about the possibility of worldwide dissemination of MERS as happened with another coronavirus, the SARS virus, the World Health Organization does not advise special screening at points of entry to the Hajj, nor does it currently recommend the application of any travel or trade restrictions.

Notes From the Field: Recurrent Outbreak of Campylobacter Jejuni Infections Associated With a Raw Milk Dairy—Pennsylvania, April–May 2013

(MMWR 62:702, 2013)—During May 2013, the Pennsylvania Department of Health (PDH) investigated an outbreak of campylobacteriosis among consumers of raw (unpasteurized) milk from a dairy certified by the Pennsylvania Department of Agriculture (PDA) to sell raw milk onsite, at retail stores, and at off-farm pickup sites. Investigation by the PDH and PDA identified 6 confirmed and 2 probable cases of campylobacteriosis associated with raw milk from the dairy. Four cases involved children aged ≤18 years. PDA identified _Campylobacter_ in bulk tank and retail milk samples from the dairy. Available isolates from patient stool (n = 1), bulk tank milk (n = 1), and retail milk (n = 1) were identified by the Centers for Disease Control and Prevention as _Campylobacter jejuni_ and were indistinguishable by pulsed-field gel electrophoresis (PFGE).

Although the dairy has consistently adhered to PDA requirements for raw...
milk dairies and conducted milk coliform and somatic cell testing more frequently than required, this was not the first outbreak associated with this dairy. During January–February 2012, the dairy was identified as the source of a multistate outbreak of campylobacteriosis. That outbreak was the largest raw milk–associated outbreak in Pennsylvania in the past 2 decades, with 148 associated cases identified. PFGE patterns from the \textit{C. jejuni} strains isolated during the 2012 and 2013 outbreaks differed, consistent with the strains isolated during the 2012 and 2013 outbreaks. Public health diversity of outbreaks differed, consistent with the strains isolated during the 2012 and 2013 outbreaks.

Repeat outbreaks from raw milk producers are not uncommon and not limited to \textit{Campylobacter}. From 2005 to 2013, Pennsylvania experienced 17 salmonellosis and campylobacteriosis outbreaks associated with retail raw milk. Five producers had >1 outbreak during that period. Bacterial contamination of raw milk can occur even under optimal conditions; seasonal changes in bovine bacterial shedding or inadequate quality control during milk collection might contribute to outbreak recurrence. Findings here and elsewhere indicate that compliance with state regulations and increased producer awareness after an outbreak are insufficient to prevent future outbreaks. Public health officials should be vigilant for outbreaks from previously implicated dairies, and public education should stress that avoiding consumption is the most effective way to prevent illness from raw milk products.

\textbf{Editorial comment.} Every time I read about an outbreak from unpasteurized milk, I visualize Pasteur turning over in his grave. There is no research showing any meaningful superior nutritional advantage of unpasteurized milk. However, it is true that some studies have found a statistically significant inverse relationship between consumption of raw milk in childhood and the development of asthma and allergies in childhood. The question is whether it is worth playing Russian roulette with the development of infectious diseases.

\textbf{Johnson & Johnson Hunts for Dengue Fever Drugs With Academia}

29 August 2013 (Reuters Health [Ben Hirschler])—Johnson & Johnson is joining the hunt for drugs to treat dengue fever—the world’s fastest-spreading tropical disease—by linking with academic researchers in Belgium and the Wellcome Trust medical charity.

There is currently no drug treatment or vaccine for the mosquito-borne viral disease.

The partnership will build on the discovery of a series of chemical compounds that are highly potent in preventing the replication of dengue virus. The compounds, which have yet to be tested in clinical trials, are active against all 4 types of the virus and have been shown to work in animal tests.

Testing them in humans will take many years. Johnson & Johnson already has a proven track record in developing other antiviral medicines, including treatments for HIV and hepatitis C virus.

Experts estimated in April that there may be as many as 390 million dengue infections around the world each year. Spread by the \textit{Aedes aegypti} mosquito, dengue has grown rapidly along with urbanization and globalization because it thrives in tropical megacities and is easily spread in goods containing small puddles of water, such as used tires.

As a result, half the world’s population is now exposed to the disease—mostly in the developing world, but also in parts of southern Europe and the southern United States.

Last year Europe experienced its first sustained transmission of dengue fever since the 1920s, with around 2000 people infected on the Portuguese archipelago of Madeira.

Hopes for an effective dengue vaccine suffered a setback last year when an experimental shot from Sanofi proved less effective than hoped in a clinical trial in Thailand.

Further large trials of the vaccine—the most advanced in development—are still continuing and scientists have not given up hope that it may yet have a role to play.

\textbf{Editorial comment.} Dengue is a real potential threat to the United States. We have many areas in the South with \textit{Aedes aegypti}, and \textit{Aedes albopictus}, the Asian tiger mosquito, which can also be a vector for dengue, is widely distributed in the United States. With climate change, there is an increased chance of a major outbreak. Of course, the development of an effective vaccine would be more important for public health than having an effective treatment.