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FDA-approved Vaccine for the Prevention of Dengue Disease in Endemic Regions

The U.S. Food and Drug Administration announced today the approval of Dengvaxia, the first vaccine approved for the prevention of dengue disease caused by all dengue virus serotypes (1, 2, 3 and 4) in people ages 9 through 16 who have laboratory-confirmed previous dengue infection and who live in endemic areas. Dengue is endemic in the U.S. territories of American Samoa, Guam, Puerto Rico and the U.S. Virgin Islands.

"Dengue disease is the most common mosquito-borne viral disease in the world and global incidence has increased in recent decades," said Anna Abram, FDA deputy commissioner for policy, legislation, and international affairs. "The FDA is committed to working proactively with our partners at the U.S. Centers for Disease Control and Prevention, as well as international partners, including the World Health Organization, to combat public health threats, including through facilitating the development and availability of medical products to address emerging infectious diseases. While there is no cure for dengue disease, today's approval is an important step toward helping to reduce the impact of this virus in endemic regions of the United States."

The CDC estimates more than one-third of the world's population is living in areas at risk for infection by dengue virus which causes dengue fever, a leading cause of illness among people living in the tropics and subtropics. The first infection with dengue virus typically results in either no symptoms or a mild illness that can be mistaken for the flu or another viral infection. A subsequent infection can lead to severe dengue, including dengue hemorrhagic fever (DHF), a more severe form of the disease that can be fatal. Symptoms may include stomach pain, persistent vomiting, bleeding, confusion and difficulty breathing. Approximately 95 percent of all severe/hospitalized cases of dengue are associated with second dengue virus infection. Because there are no specific drugs approved for the treatment of dengue disease, care is limited to the management of symptoms.

Each year, an estimated 400 million dengue virus infections occur globally according to the CDC. Of these, approximately 500,000 cases develop into DHF, which contributes to about 20,000 deaths, primarily among children. Although dengue cases are rare in the continental U.S., the disease is regularly found in American Samoa, Puerto Rico, Guam, the U.S. Virgin Islands, as well as Latin America, Southeast Asia and the Pacific islands.

"Infection by one type of dengue virus usually provides immunity against that specific serotype, but a subsequent infection by any of the other three serotypes of the virus increases the risk of developing severe dengue disease, which may lead to hospitalization or even death," said Peter Marks, M.D., director of the FDA's Center for Biologics Evaluation and Research. "As the second infection with dengue is often much more severe than the first, the FDA's approval of this vaccine will help protect people previously infected with dengue virus from subsequent development of dengue disease."

The safety and effectiveness of the vaccine was determined in three randomized, placebo-controlled studies involving approximately 35,000 individuals in dengue-endemic areas, including Puerto Rico, Latin America and the Asia Pacific region. The vaccine was determined to be approximately 76 percent effective in preventing symptomatic, laboratory-confirmed dengue disease in individuals 9 through 16 years of age who previously had laboratory-confirmed dengue disease. Dengvaxia has already been approved in 19 countries and the European Union.

The most commonly reported side effects by those who received Dengvaxia were headache, muscle pain, joint pain, fatigue, injection site pain and low-grade fever. The frequency of side effects was similar across Dengvaxia and placebo recipients and tended to decrease after each subsequent dose of the vaccine.

Dengvaxia is not approved for use in individuals not previously infected by any dengue virus serotype or for whom this information is unknown. This is because in people who have not been infected with dengue virus, Dengvaxia appears to act like a first dengue infection – without actually infecting the person with wild-type dengue virus – such that a subsequent infection can result in severe dengue disease.Therefore, health care professionals should evaluate individuals for prior dengue infection to avoid vaccinating individuals who have not been previously infected by dengue virus. This can be assessed through a medical record of a previous laboratory-confirmed dengue infection or through serological testing (tests using blood samples from the patient) prior to vaccination.

Dengvaxia is a live, attenuated vaccine that is administered as three separate injections, with the initial dose followed by two additional shots given six and twelve months later.

The FDA granted this application Priority Review and a Tropical Disease Priority Review Voucher under a program intended to encourage development of new drugs and biologics for the prevention and treatment of certain tropical diseases. The approval was granted to Sanofi Pasteur.

FDA News released May 01, 2019. www.fda.gov.

FDA Approves New Treatment for Pediatric Patients with Type 2 Diabetes

The U.S. Food and Drug Administration today approved Victoza (liraglutide) injection for treatment of pediatric patients 10 years or older with type 2 diabetes. Victoza is the first non-insulin drug approved to treat type 2 diabetes in pediatric patients since metformin was approved for pediatric use in 2000. Victoza has been approved to treat adult patients with type 2 diabetes since 2010.

"The FDA encourages drugs to be made available to the widest number of patients possible when there is evidence of safety and efficacy," said Lisa Yanoff, M.D, acting director of the Division of Metabolism and Endocrinology Products in the FDA's Center for Drug Evaluation and Research. "Victoza has now been shown to improve blood sugar control in pediatric patients with type 2 diabetes. The expanded indication provides an additional treatment option at a time when an increasing number of children are being diagnosed with this disease."

Type 2 diabetes is the most common form of diabetes, occurring when the pancreas cannot make enough insulin to keep blood sugar at normal levels. Although type 2 diabetes primarily occurs in patients over the age of 45, the prevalence rate among younger patients has been rising dramatically over the past couple of decades. The Diabetes Report Card published by the U.S. Centers for Disease Control and Prevention estimates that more than 5,000 new cases of type 2 diabetes are diagnosed each year among U.S. youth younger than age 20.

Victoza improves blood sugar levels by creating the same effects in the body as the glucagon-like peptide (GLP-1) receptor protein in the pancreas. GLP-1 is often found in insufficient levels in type 2 diabetes patients. Like GLP-1, Victoza slows digestion, prevents the liver from making too much glucose (a simple sugar), and helps the pancreas produce more insulin when needed. As noted on the label, Victoza is not a substitute for insulin and is not indicated for patients with type 1 diabetes or those with diabetic ketoacidosis, a condition associated with diabetes where the body breaks down fat too quickly because there is inadequate insulin or none at all. Victoza is also indicated to reduce the risk of major adverse cardiovascular events in adults with type 2 diabetes and established cardiovascular disease; however, its effect on major adverse cardiovascular events in pediatrics was not studied and it is not indicated for this use in children.

The efficacy and safety of Victoza for reducing blood sugar in patients with type 2 diabetes was studied in several placebo-controlled trials in adults and one placebo-controlled trial with 134 pediatric patients 10 years and older for more than 26 weeks. Approximately 64% of patients in the pediatric study had a reduction in their hemoglobin A1c (HbA1c) below 7% while on Victoza, compared to only 37% who achieved these results with the placebo. HbA1c is a blood test that is routinely performed to evaluate how well a patient's diabetes is controlled, and a lower number indicates better control of the disease. These results occurred regardless of whether the patient also took insulin at the same time. Adult patients who took Victoza with insulin or other drugs that increase the amount of insulin the body makes (e.g., sulfonylurea) may have an increased risk of hypoglycemia (low blood sugar). Meanwhile, pediatric patients 10 years and older taking Victoza had a higher risk of hypoglycemia regardless of whether they took other therapies for diabetes.

The prescribing information for Victoza includes a Boxed Warning to advise health care professionals and patients about the increased risk of thyroid C-cell tumors. For this reason, patients who have had, or have family members who have ever had medullary thyroid carcinoma (MTC) should not use Victoza, nor should patients who have an endocrine system condition called multiple endocrine neoplasia syndrome type 2 (MEN 2). In addition, people who have a prior serious hypersensitivity reaction to Victoza or any of the product components should not use Victoza. Victoza also carries warnings about pancreatitis, Victoza pen sharing, hypoglycemia

when used in conjunction with certain other drugs known to cause hypoglycemia including insulin and sulfonylurea, renal impairment or kidney failure, hypersensitivity and acute gallbladder disease. The most common side effects are nausea, diarrhea, vomiting, decreased appetite, indigestion and constipation.

The FDA granted this application Priority Review. The approval of Victoza was granted to Novo Nordisk.

FDA News released June 17, 2019. www.fda.gov.

FDA Approves First Treatment for Severe Hypoglycemia That Can be Administered Without an Injection

The U.S. Food and Drug Administration today approved Baqsimi nasal powder, the first glucagon therapy approved for the emergency treatment of severe hypoglycemia that can be administered without an injection.

Severe hypoglycemia occurs when a patient's blood sugar levels fall to a level where he or she becomes confused or unconscious or suffers from other symptoms that require assistance from another person to treat. Typically, severe hypoglycemia occurs in people with diabetes who are using insulin treatment. Baqsimi is approved to treat severe hypoglycemia in patients with diabetes ages four and older.

"People who are living with diabetes are at risk of their blood sugar levels falling below the normal range. There are many products on the market for those who need insulin, but until now, people suffering from a severe hypoglycemic episode had to be treated with a glucagon injection that first had to be mixed in a several-step process," said Janet Woodcock, M.D., director of the FDA's Center for Drug Evaluation and Research. "This new way to administer glucagon may simplify the process, which can be critical during an episode, especially since the patient may have lost consciousness or may be having a seizure. In those situations, we want the process to treat the suffering person to be as simple as possible."

Baqsimi, which is a powder administered into the nose, will come in a single-use dispenser that can be given to someone suffering from a severe hypoglycemic episode. Baqsimi increases blood sugar levels in the body by stimulating the liver to release stored glucose into the bloodstream. It has the opposite effect of insulin, which lowers blood sugar levels.

Injectable glucagon has been approved for use in the U.S. for several decades.The efficacy and safety of Baqsimi nasal powder glucagon to treat severe hypoglycemia was evaluated in two studies of 83 and 70 adults with diabetes, comparing a single dose of Baqsimi to a single dose of glucagon injection in causing a blood sugar response to insulin-induced hypoglycemia. Baqsimi adequately increased blood sugar levels. In a pediatric study of 48 patients over the age of four with type 1 diabetes, similar results were observed.

Baqsimi should not be taken by patients with pheochromocytoma, a rare tumor of adrenal gland tissue, or by patients who have insulinoma, a tumor of the pancreas. Baqsimi should not be taken by patients with a known hypersensitivity to glucagon or the inactive ingredients found in Baqsimi, as allergic reactions may occur. Baqsimi also carries a warning that it should be used with caution by those who have been fasting for long periods, have adrenal insufficiency or have chronic hypoglycemia because these conditions result in low levels of releasable glucose in the liver. The most common adverse reactions associated with Baqsimi are nausea, vomiting, headache, upper respiratory tract irritation, watery eyes, redness of eyes and itchiness. Side effects of Baqsimi are similar to injectable glucagon, with the addition of nasal and eye-related symptoms, such as watery eyes and nasal congestion, because of the way the drug is administered.

The FDA granted the approval of Baqsimi to Eli Lilly and Company.

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

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Source: FDA

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