



Vaxigrip Tetra® – The quadrivalent influenza vaccine

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Introduction

Influenza, also known as “flu”, is an acute viral infection of the respiratory tract caused by influenza viruses. There are three types of seasonal influenza viruses – A, B and C, with A and B flu viruses causing most cases of seasonal flu. Flu viruses circulate in all parts of the world, causing illness that can range from mild to severe, and even death. Globally, it is estimated that flu can cause up to five million people to have severe, complicated illness, with between 290 000 to 650 000 flu-related deaths each year. In South Africa, it is estimated that 11 800 people lose their lives annually from flu-related illnesses.

Flu – transmission, symptoms and complications

Flu is a highly infectious viral illness that is spread from one person to another via infectious droplets when an infected person coughs or sneezes. In addition, the virus can also be spread by touching contaminated surfaces, objects or hands and then touching the eyes, nose or mouth. The incubation period of flu is short, ranging from one to four days (average of two days).

Typical flu symptoms include a sudden onset of fever, sore muscles, dry cough, sore throat, rhinitis (runny nose) and headache. Flu is generally a self-limiting illness. Most people will feel better after three to seven days. However, some people are at high risk of complications from flu. Pneumonia (most commonly secondary bacterial pneumonia) or lower respiratory tract infections are the most common flu-related

complications. In rare cases, the heart, brain, spinal cord or multiple organs may be affected. The table below outlines the people at highest risk of complicated flu.

Table 1: Groups at risk of complicated flu

Groups at risk of complicated flu
Pregnant women
HIV-infected individuals and other immunosuppressed individuals
Individuals with chronic conditions such as chronic respiratory disease (including tuberculosis), chronic heart diseases, chronic kidney diseases, diabetes mellitus and similar metabolic disorders, chronic liver disease or chronic neurological disease
Elderly people (over 65 years of age)
Children aged six months to 59 months
Healthcare workers
Individuals aged six months to ≤ 18 years on long-term aspirin therapy (owing to the possible risk for experiencing Reye's syndrome if they develop flu)
People who are morbidly obese (body mass index ≥ 40 kg/m ²)
Residents of old-age homes, rehabilitation and chronic care institutions

Vaccination: the key to preventing flu

While flu can be potentially life-threatening in some people, it is a vaccine-preventable illness. It is important to understand that the flu vaccine only provides protection against the different strains of influenza viruses included in the vaccine. It is therefore important that the vaccine strains match the circulating strains in the environment as closely as possible. Until now, only trivalent (three strain) flu vaccines were available in South Africa.

South Africa's first quadrivalent flu vaccine: Vaxigrip Tetra®

Vaxigrip Tetra® contains four inactivated influenza virus strains for the 2020 southern hemisphere flu season: two influenza A subtypes and two influenza B types. Table 2 provides a brief overview of the quadrivalent flu vaccine.

Table 2: Overview of Vaxigrip Tetra®

Composition
The quadrivalent flu vaccine contains two influenza A subtypes and two influenza B types: <ul style="list-style-type: none"> • A/Brisbane/02/2018 (H1N1)pdm09 - like strain • A/South Australia/34/2019 (H3N2) - like strain • B/Washington/02/2019 - like strain • B/Phuket/3073/2013 - like strain
Indications
Vaxigrip Tetra® is indicated for active immunisation of adults and children from 3 years of age and older for the prevention of influenza disease caused by the two influenza A virus subtypes and the two influenza B virus types contained in the vaccine.
Dosage and directions for use
The dose for adults and children from 9 years of age: one 0.5 millilitre (ml) dose. Children from 3 to 8 years of age: <ul style="list-style-type: none"> • If the child has not previously been vaccinated: two 0.5 ml injections at least one month apart. • If the child has previously been vaccinated: a single 0.5 ml injection. The vaccine should be given by intramuscular or deep subcutaneous injection
Safety
Vaxigrip Tetra® is a split vaccine, meaning that the flu viruses have been "killed" or inactivated. The vaccine viruses are therefore not infectious and a person cannot get flu from the vaccine. The most frequently reported adverse reaction after vaccination reported in studies was injection site pain. Other very common side-effects include malaise and headache.

The quadrivalent flu vaccine – wider coverage against influenza B viruses

Prior to the availability of the quadrivalent flu vaccine, the available flu vaccines incorporated one influenza B type virus. Globally, most cases of flu are caused by the influenza A virus, but, up to 25% of flu cases are caused by influenza B viruses. Two different influenza B strains may co-circulate during a flu season. Therefore, including the second B strain in the flu vaccine may help to overcome the difficulties of predicting the circulating B strains, thereby increasing the likelihood of achieving adequate protection against influenza B disease.

Flu caused by influenza B viruses has been known to be mild and more common in children. However, recent studies suggest that its impact may have been underestimated, particularly in people at high risk of complicated flu. Recent studies have shown that the severity of illness from influenza B viruses was similar to that of influenza A viruses in children and adults. Furthermore, flu caused by influenza B virus types carried a higher rate of hospitalisation compared to influenza A in HIV-positive patients.

The 2020 flu vaccine recommendations

Unlike previous years, the approaching 2020 flu season will be unique due to the current global COVID-19 pandemic. While it must be noted that the flu vaccine is not effective in preventing coronavirus infection, a high demand for the flu vaccine is expected. In light of this and the limited supply of the flu vaccines in South Africa, it is important that the

vulnerable groups are given preference to being vaccinated with the flu vaccine. The National Department of Health has published guidelines which prioritise the following groups to receive the flu vaccine. The following excerpt is taken from the National Department of Health (South Africa) Guidelines on Influenza Vaccination for 2020:

- "It is mandatory for all healthcare workers to be vaccinated against influenza;
- The next group to be prioritised is individuals over the age of 65 years;
- Following the elderly, people with cardiovascular disease (including heart disease, hypertension, stroke and diabetes) and chronic lung disease (including asthma and chronic obstructive pulmonary disease);
- Pregnant women and people living with HIV and AIDS should be considered for influenza vaccination once the above groups have been vaccinated if supplies are available."

Healthcare workers are given priority to protect not only themselves, but more importantly their patients and vulnerable colleagues against flu and its complications. Pregnant women can be vaccinated at any stage of pregnancy, including the postpartum period.

Conclusion

Annual influenza immunisation is the most effective means of preventing flu and its complications, and is particularly recommended for patients at high risk of complicated flu. The availability and accessibility of the quadrivalent flu vaccine in South Africa offers adequate coverage against flu caused by influenza B viruses, along with the two influenza A subtypes. The quadrivalent flu vaccine may be offered to patients from three years of age and use should be prioritised as per the guidelines.

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