

## Significance of Oseltamivir the First Line Drug of Influenza

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### DESCRIPTION

Influenza, commonly known as the flu, is a highly contagious respiratory illness that affects millions of people worldwide every year. The rapid spread and potentially severe consequences of the flu have prompted the development of antiviral medications to combat this viral infection. One such drug that has gained significant attention is Oseltamivir, marketed under the brand name Tamiflu. This article delves into the mechanism of action, effectiveness, side effects, and controversies surrounding Oseltamivir. Oseltamivir belongs to a class of drugs called neuraminidase inhibitors. Neuraminidase is an enzyme produced by the influenza virus that allows it to release itself from infected cells, facilitating its spread to other cells. Oseltamivir works by inhibiting this enzyme, thereby preventing the release of new viral particles and slowing down the progression of the infection.

When administered promptly after the onset of flu symptoms, Oseltamivir has been shown to reduce the duration of illness by about a day and alleviate symptoms such as fever, cough, sore throat, and fatigue. Moreover, the drug has the potential to prevent complications associated with influenza, particularly in high-risk individuals such as the elderly, young children, pregnant women, and those with underlying health conditions.

Clinical studies have demonstrated the efficacy of Oseltamivir in treating influenza, especially when initiated within the first 48 hours of symptom onset. However, it is important to note that the drug is not a substitute for vaccination, which remains the most effective way to prevent influenza infection. Oseltamivir should be considered as an additional tool in the management of influenza, particularly in cases where vaccination was not received or proved ineffective. As with any medication, Oseltamivir can have side effects. The most commonly reported adverse effects include nausea, vomiting, headache, and abdominal pain. These symptoms are generally mild and self-limiting. Rarely, more serious side effects such as allergic reactions

and neuropsychiatric events have been reported, although the causal relationship between these events and Oseltamivir is still debated. Another point of contention surrounding Oseltamivir is its effectiveness in reducing complications and mortality associated with influenza. Some studies have suggested that the drug may reduce the risk of hospitalization and lower the likelihood of severe outcomes, especially in high-risk populations. However, other studies have questioned the overall benefit of Oseltamivir, highlighting the need for further investigation and the importance of individualized treatment decisions.

Additionally, concerns have been raised regarding the widespread use of Oseltamivir, particularly during influenza outbreaks or pandemics. The global demand for the drug surged during the H1N1 influenza pandemic in 2009, leading to stockpiling by governments around the world. This raised questions about the allocation of resources and the appropriate use of Oseltamivir, considering its limited effectiveness in certain situations. Despite the controversies, Oseltamivir continues to be an essential component of influenza management, especially when prescribed judiciously and in accordance with treatment guidelines. The drug has proven to be effective in reducing the duration and severity of illness in some cases and remains an important option for individuals at higher risk of complications.

In conclusion, Oseltamivir, or Tamiflu is an antiviral medication used in the treatment and prevention of influenza. It inhibits the neuraminidase enzyme produced by the influenza virus, thereby impeding its ability to spread and cause further damage. Although Oseltamivir has shown efficacy in reducing the duration of illness and preventing complications, debates about its overall effectiveness and side effects persist. Proper and responsible use of the drug, alongside vaccination, can aid in the fight against influenza and protect vulnerable populations from severe outcomes. However, ongoing research and critical evaluation of Oseltamivir's benefits and limitations are necessary to guide evidence-based treatment decisions in the future.

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