Using oseltamivir (Tamiflu) as a first line treatment for seasonal or pandemic flu

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Antivirals are essential lines of defence in the management of H1N1 (swine flu), especially during the early stages of an outbreak or pandemic and before a vaccine is available. Researchers segregate influenza into three genera. Aquatic birds are the natural host of influenza A – which includes the H1N1 virus, – but some strains are passed between species, potentially causing epidemics and pandemics. Influenza B infects only humans and usually causes less severe illness and more limited outbreaks than influenza A. Influenza C is one cause of the common cold.

Influenza A contains eight genes that encode 10 proteins, including haemagglutinin and neuraminidase. Haemagglutinin allows influenza to bind to and invade the host’s cells. Neuraminidase, an enzyme, helps release new virus particles from infected cells (Bouvier and Palese, 2008). Oseltamivir (Tamiflu) and zanamivir (Relenza) target influenza A and B (Matheson et al, 2007).

OSEL TAMIVIR

Oseltamivir is recommended as the first line treatment in the current swine flu pandemic. Treatment should begin as soon as possible and within two days of symptom onset. The recommended oral dose for adolescents aged 13–17 and adults is 75mg twice daily for five days to treat infection and 75mg once daily for 10 days as post-exposure prophylaxis. The dose is adapted for younger children and within two days of symptom onset. Oseltamivir is not ordinarily prescribed for prophylaxis in the current outbreak. However, the HPA (2009b) recommends that clinical judgement should be used when a vulnerable individual, for example someone who has long term lung disease has been in close proximity to an infected individual (Zanamivir is recommended for some people with long term kidney disease and for pregnant women).

Oseltamivir is successful as a prophylaxis against symptomatic influenza in 61% of people taking 75mg daily. In adults, 150mg of oseltamivir daily reduces the risk of lower respiratory tract complications by 68%. Adults taking oseltamivir are 20–30% more likely to have their symptoms alleviated than those taking placebo (Jefferson et al, 2006).

In children with confirmed influenza, oseltamivir reduces the duration of illness by 26%. It also reduced the risk of complications. The reduction in acute otitis media is especially marked: a decline of 44% among children aged 1–2 years and of 56% in those aged 1–5 years were found at a 28 day follow-up (Matheson et al, 2007).

Care should be taken when prescribing oseltamivir for pregnant women and for patients who have renal impairment. It is important that HPA guidance is followed (HPA, 2009). Zanamivir is recommended for these patients as it is an inhaled medicine that reaches low concentrations in the blood (HPA, 2009).

Side-effects

Oseltamivir is a generally well tolerated drug. Gastrointestinal adverse reactions appear to be twice as common following oseltamivir than placebo. Vomiting was a complication in children treated with oseltamivir (Matheson et al, 2007). In adults, oseltamivir induced nausea and the risk was especially marked with a 150mg daily dose (Jefferson et al, 2006).

Nurses need to encourage the judicious antiviral use to limit resistance, which is beginning to emerge. During the 2007–2008 season, 12% of H1N1 cases in the US showed oseltamivir resistance. Preliminary data from 2008–2009 suggest a marked increase in resistance (Dharan et al, 2009).

CONCLUSION

Oseltamivir is not a magic bullet for influenza. However, a combination of the ‘catch it, bin it, kill it’ public health messages, vaccines and antivirals should mean that society is in a better position than ever before to counter the threat from pandemic flu.

KEY POINTS

- Neuraminidase, an enzyme, helps release new virus particles from infected cells. Oseltamivir inhibits neuraminidase and targets influenza A and B.
- Treatment with oseltamivir should begin within two days of onset of symptoms of influenza.
- Oseltamivir shortens disease duration, reduces the risk that influenza will spread and lowers the likelihood of complications.
- Oseltamivir is generally well tolerated.
- Although gastrointestinal adverse reactions appear to be twice as common following oseltamivir than with placebo.
- Nurses need to encourage the judicious use of antivirals to limit resistance.

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REFERENCES

Health Protection Agency (2009a) Summary of Prescribing Guidance for the Treatment and Prophylaxis of Influenza-like Illness. Treatment Phase. tinyurl.com/flu-prescribing