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Preface

Epidemic influenza viruses remain high on the list of the infectious agents that inflict significant morbidity and mortality on the human population. The recent and ongoing outbreak of 'swine flu' provides a timely reminder of how rapidly new strains can emerge, and this family of viruses continues to pose the real threat of a catastrophic pandemic. Much effort is rightly directed to developing better methods for protective vaccination, but influenza virus is genetically mobile and antiviral compounds also have an important role in our defensive strategy.

The history of anti-influenza chemotherapy dates back to 1964 with the discovery of amantadine and subsequently rimantadine. These compounds proved the principle that influenza therapy could prevent or ameliorate the clinical signs in this highly infectious acute disease. However, those early compounds enjoyed only limited success, and this lack of efficacy was, at least in part, thought to be due to the rapid selection of amantadine-resistant variants. Structural studies on influenza virion components, in particular the envelope glycoproteins, enabled the rational design of neuraminidase inhibitors starting with zanamivir in 1993. Zanamivir was an important breakthrough; however, its utility is limited by poor oral bioavailability. The first report in 1997 of oseltamivir (Tamiflu), a neuraminidase inhibitor oral prodrug that overcame this limitation, thus represented another major advance in the field.

The recent flu pandemic has once more provided urgency for the development and assessment of influenza antiviral chemotherapy. During the last decade a great deal of valuable data have been obtained from the use of oseltamivir in different human populations under various circumstances, including information on the significant problem of antiviral resistance. This Supplement rehearses many of the key findings from the clinical trials to date. The scholarly reviews are by four authors who are all international experts with direct experience of oseltamivir. As well as providing some insight into current and planned lines of investigation, the conclusions they draw will help to inform debate on the further use of oseltamivir. Furthermore, the articles should provide an important source of background information to enlighten trials with future novel influenza antiviral compounds.

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Transparency declarations

None to declare.