

Adamantine resistance increasing in the US

There has been an increase in the frequency of amantadine and rimantadine resistance among circulating influenza A viruses in the US "over the past few years", representing a need for rapid surveillance for antiviral resistance, according to researchers from the US.¹

Early during the US 2005–2006 influenza season, they used a pyrosequencing method to detect mutations in the M2 gene of isolates collected from patients in 26 states.

Of 209 influenza A H3N2 virus isolates analysed, 193 (92.3%) contained a serine to asparagine point mutation at amino acid 31 (S31N), a change that conferred resistance to amantadine and rimantadine; six of these isolates also contained a valine to isoleucine change at amino acid 27. Adamantine resistance was widespread across the US. Additional isolates from Mexico and Canada showed 100% resistance to amantadine and rimantadine.

In an editorial accompanying the study, Drs David M Weinstock and Gianna Zuccotti from Memorial Sloan-Kettering Cancer Center, New York, US, state that the response to this increase in adamantane resistance needs to be "global and immediate".² They also suggest that, "if antiviral use is curtailed, susceptible strains could emerge and adamantanes could regain their utility against both epidemic and pandemic influenza".

1. Bright RA, et al. Adamantane resistance among influenza A viruses isolated early during the 2005-2006 influenza season in the United States. JAMA: the Journal of the American Medical Association 295: 891-894, No. 8, 22 Feb 2006.

2. Weinstock DM, et al. Adamantane resistance in influenza A. JAMA: the Journal of the American Medical Association 295: 934-936, No. 8, 22 Feb 2006.