0–50, 51–100, 101–150, 151–200 and 201 and above. In each group we monitored clinical improvement, occurrence of OIs, increment of CD4 count. We found that respiratory tract infection (RTI) was the most frequently occurring infection in our study groups. Next common OIs were tuberculosis and oral candidiasis (OC) followed by diarrheal diseases and herpes virus infections. After following up for 3 years we found a significant increase in CD4 counts in all groups. Incidence of total number of OIs decreased from 91% during the 1st year of ART to 36% during the 3rd year in our study population. Incidence of RTI decreased in our 5 study groups from 75%, 66%, 42%, 56.25% and 65.2% during the 1st year to 0%, 50%, 10.5%, 12.5%, and 17% respectively during the 3rd year. Similarly incidence of tuberculosis (pulmonary and extra-pulmonary combined) decreased from 41%, 50%, 32%, 6.25% and 26% to 8%, 5.6%, 0%, 0%, and 0% respectively. This study on OIs in people living with HIV/AIDS in West Bengal will help any further study in the said field.

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41

Crimean Congo Haemorrhagic Fever Virus: An Emerging Concern for Iran's Public Health

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Introduction: Crimean Congo Haemorrhagic Fever (CCHF) is a tick borne viral haemorrhagic zoonosis with a mortality rate up to 50%, caused by CCHF virus (CCHFV), genus Nairovirus, family Bunyaviridae. In the transmission cycle of the disease, ticks play both vector and reservoir roles. CCHF is transmitted by tick bite, handling of infected livestock organs or blood and nosocomially.

Methods: Since the emergence of CCHF in Iran, in 1999, it is considered a major health problem and after the foundation of the laboratory of Arboviruses and Viral Haemorrhagic Fevers in the Pasteur Institute of Iran as a National Reference Laboratory, sera were collected from Iranian probable patients from June 2000 till now and tested by Elisa for anti CCHF antibodies (IgM and IgG) and by RT-PCR (Real time and gel based) for a fragment of the virus genome.

Results: Our data show that the disease has infected 23 out of 30 provinces of Iran and has been continuously seen in some provinces such as Sistan va Baluchestan through these last 11 years, while it was sporadically seen in the other provinces. During all these years, Sistan va Baluchestan has always been the first contaminated province in Iran and in the year 2010, it was followed by Khorasan and Yazd as the second and third most contaminated provinces respectively.

Conclusion: Our results demonstrate that CCHF is the most important viral haemorrhagic fever in Iran and a major public health problem. As the most infected province, Sistan-Baluchestan has faced the disease annually, because its neighbors with a large border in the east are Pakistan and Afghanistan where the disease is endemic. Moreover, the phylogenetic studies have confirmed the origin of the Iranian CCHF strain very similar to that of Pakistan (Matin strain).

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42

Antiviral Drug-Resistant Influenza Viruses in Gyeonggi Province, South Korea, from 2005 to 2010

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Amantadine and oseltamivir are pharmaceutical options used to control influenza infections. To investigate the prevalence of antiviral resistance among influenza viruses in the Gyeonggi province of South Korea, genetic and phenotypic assays were conducted for 491 influenza viruses (86 A/H1N1, 152 A/H3N2, 121 pandemic A/H1N1 2009(pdm) and 132 B), isolated between 2005 and 2006 season and 2009–2010 season. To identify potentially resistant viruses to the amantadine and oseltamivir, the Matrix(M)2 and Neuraminidase(NA) gene were amplified by RT-PCR and followed by sequence analysis. The frequency of resistance to amantadine among A type influenza viruses was 30% ($n = 70$) A/H1N1, 76% ($n = 124$) A/H3N2 and 100% ($n = 114$) A/H1N1 pdm, respectively. The A/H1N1 isolates from 2007 to 2008 season, A/H3N2 from 2005 to 2006, 2007 to 2008, 2008 to 2009 season and all A/H1N1 pdm had resistance to amantadine, but A/H3N2 isolates in 2006–2007 season revealed 53% ($n = 62$) resistance. The S31N substitution in M2 protein mainly contributed to amantadine-resistance and only an A/H3N2 isolate had L26F/S31N substitution, confirmed by virus reduction assay. The resistant pattern to oseltamivir was also analysed. 56% ($n = 71$) A/H1N1 were resistant, but 117 A/H3N2, 80 B and 74 A/H1N1 pdm were susceptible to oseltamivir. Especially, A/H1N1 isolates in 2008–2009 season harbored H274Y mutation in NA protein and were found to be resistant using the fluorometric NA inhibition assay. The widespread resistance to amantadine and recent increase in oseltamivir-resistance among influenza viruses raises public health concerns. The close monitoring system for the antiviral resistance should be intensified and maintained to provide guideline for prophylaxis and treatment of influenza.

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43

Rigid Amphipathic Fusion Inhibitors (RAFIs) Inhibit Infectivity of Enveloped Viruses by Targeting Envelope Lipids to Prevent Fusion With Cellular Membranes

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We have described a family of novel antiviral compounds, the rigid amphipathic fusion inhibitors (RAFIs). RAFIs are active against otherwise unrelated enveloped viruses, including HSV-1, HSV-2, HCV and VSV. They inhibit viral entry with no obvious effects on physiological cellular fusions. Our lead RAFIs, dUY11 and aUY11, are not cytotoxic. Amphipathicity, molecular shape (with hydrophilic heads larger than their hydrophobic tails), rigidity and planarity are all essential for their antiviral activity. Here, we show that RAFIs target the lipids in virion envelopes to inhibit fusion. We examined the spectra of the intrinsically fluorescent dUY11 in environments of different polarities. The spectra were most similar when dUY11 was mixed with VSV virions or liposomes. Both spectra were distinct from that in aqueous buffer but very similar to that in octanol. Confocal microscopy revealed that dUY11 also localized to cell membranes. We next tested fusion using fluorescence dequenching assays. VSV virions labeled at self-quenching concentrations