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Epidemiology of avian influenza in India

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Highly pathogenic avian influenza (HPAI) H5N1 virus first reported in 1996 in domestic geese. The upsurge of HPAI H5N1 epizootic waves linked to changes in agricultural practices, intensification of the poultry sector, and globalisation of trade in live poultry and poultry products. Fourteen Indian states were affected with H5N1 AI outbreaks since 2006. Most of the H5N1 AI outbreaks were restricted to Eastern and North Eastern states of India. Among the affected states, maximum number of outbreaks occurred in West Bengal & in Murshidabad district. Totally forty six districts affected. Majority of the outbreaks occurred in 2008 involving three Eastern and North Eastern states leading to huge loss. Outbreaks occurred in almost all months except in June. Case Fatality Rate (CFR), Morbidity rates & Mortality rates ranges from 37.2% - 100%, 0.15% - 93.05%, 0.15% - 92.4%. H5N1 Prevalence ranged from 0.21 % to 13.53%. The overall prevalence was 1.68%. Ten outbreaks from poultry farms, five from wild bird species and others from backyard poultry. Outbreaks were more during winter season which has very low temperature enhancing survivability of virus in environment. Phylogenetic analysis of HA region of H5N1 outbreak isolates reveals that clade 2.2 viruses were circulating from 2006 onwards and clade 2.3.2 viruses during 2011. Apart from H5N1, H9N2, H4N6, H11N1, H4N2, H9N3, H2N2, H3N2 viruses isolated from different bird species/ducks from different places in India. Isolation from wild water/migratory birds indicates they may be the reservoir without any symptoms and may act as source of infection for other species.

Biography

R Sridevi has completed MVSc and PhD in Bacteriology & Mycology in Indian Veterinary Research Institute (IVRI), Bareilly (UP). She joined in Indian Council of Agricultural Research (ICAR) system in 2009. She worked as scientist in High Security Animal Disease Laboratory (HSADL), Bhopal, Madhya Pradesh for about four years in avian influenza diagnosis and research. Currently she is working as scientist in National Institute of Veterinary Epidemiology and Disease Informatics (NIVEDI), Bangalore, Karnataka. She has 12 publications in reputed journals related to avian influenza, rabies, West Nile, *Pasteurella multocida*, *Candida albicans* etc. She is life member of scientific communities/societies - Indian Association for Veterinary Microbiologists and Immunologists, Indian Association for Advancement of Veterinary Research, Society for Biosafety and annual member in Indian association for microbiologists in 2011. She is a fellow of Society for Biotechnology (2012).

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