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Molecular epidemiology of Influenza virus infection in Nepal

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Material & Methods: A total of 3663 throat swab specimens, obtained from patients with Influenza like Illness (ILI) at National Influenza Surveillance Network (NISN) sentinel hospitals, were transported to National Influenza Center, maintaining reverse cold chain, within 48 hours. Viral RNA was extracted using QIAmp viral RNA kit. Polymerase Chain Reaction assay (PCR) was performed following CDC Real-time RTPCR protocol for detection and characterization of the influenza viruses including pandemic influenza virus A (H1N1) pdm 09. Randomly selected 10% of PCR positive specimens were subjected to virus isolation in Madian Darby Canine Kidney (MDCK) cells and characterized by Haemagglutination Inhibition Assay

Results: Out of the 3663 throat swab specimens collected from ILI cases, influenza viruses were detected in 1206 (39.93%) specimens. Influenza A infection was detected in 1004/3663 (11.4%) cases; of which 948/3663 (25.8%) were influenza A (H1N1) pdm 09 and 56/3663 (1.5 %) were influenza A/H3 subtype. Influenza B was detected in 56/3663 (1.9%) cases. Influenza A (H1N1) pdm09 and influenza B co-infection was observed in 4/3663 (0.1%) cases. Influenza A (H1N1) pdm 09, A/H3 and B virus were antigenically similar to the novel influenza A/California/07/2009-Like (H1N1)v type viruses; A/Victoria/361/2011 (H3N2) viruses and B/Wisconsin/1/2010 viruses respectively. Although sporadic cases of influenza were observed throughout the year, peak was observed during July to November. The highest number of influenza A (H1N1) pdm09 and Influenza B were found in September and in Children (<15 years of age group)

Conclusion: All types of influenza viruses are in circulation in Nepal, with the peak during July-November. Comparison of genetic patterns of influenza virus in consecutive years is necessary to link viral genetic changes with antigenic changes.

Biography

Bimelash Kumar Jha is currently working as a s Vice principal of Kantipur academy of health science since 2014.He has years of experience in the field of health science and vaccine research. He Completed his PhD From Tribhuvan University in Department of Biotechnology, Nepal.

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