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A cross-sectional surveillance study for respiratory viruses in hospitalized children at Riyadh, Saudi Arabia

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Viruses are the major cause of acute respiratory tract infections (ARTIs) in infants and young children worldwide. Saudi Arabia is one of the major countries under risk of emergence and evolution of respiratory viruses due to the geographic location and increased workforce demand. However, there is a significant lack of information on the epidemiology of respiratory viruses among children in Saudi Arabia. In this study, the prevalence of principal respiratory viruses was studied in Riyadh province by collection of 174 nasopharyngeal aspirates from children hospitalized with ARTIs during the winter-spring seasons of 2007/08 and 2008/09. Viral RNA was extracted and screened for 10 prevalent respiratory viruses using monoplex end-point and real-time RT-PCR assays. Respiratory syncytial virus (RSV) was the most frequently detected virus (22.42%), followed by influenza viruses (19.54%), metapneumovirus (10.92%), coronaviruses (8.04%), and finally parainfluenza viruses (6.32%). No evidence for the circulation of influenza B and parainfluenza type 1 viruses was demonstrated in the collected samples. A considerable rate (6.9%) of mixed infection was recorded particularly in 2007/2008 season. Typing of positive RSV samples elucidated slight predominance of type A viruses. No significant correlation was demonstrated between the prevalence rates and patient gender. However, most cases of RSV and PIV infections were reported in infants less than six-months-old, while influenza, parainfluenza and corona viruses were more frequent in older children. The current study demonstrated the circulation of most prevalent respiratory virus in hospitalized children in Saudi Arabia with approximately similar rates recorded in many countries worldwide.

Biography

Fahad N Almajhdi is an associate professor of Molecular Virology at College of Science, King Saud University. He received his PhD in molecular virology from Kansas State University, USA at 2002. His research concentrated on the development of diagnostic tools for detection and typing of human respiratory viruses and identification of the prevalent viruses among the Saudi population. Besides, he also implicating in the process of developing DNA vaccine against human papilloma virus type 16 and molecular diagnostic kits for interferon monitoring. He has published more than 30 papers in reputed journals.