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micro scoop



Rapid detection of respiratory viruses

Influenza-like illnesses, also known as acute respiratory infections, can be attributed to a wide variety of viruses, including Respiratory syncytial virus, Influenza viruses, Human rhinoviruses, and Coronaviruses¹⁻⁴. Patients infected by one or more

of these pathogens often experience nonspecific, overlapping symptoms, such as fever, fatigue, and coughing, that make the infection clinically indistinguishable from those caused by other respiratory viruses. As such, the clinical diagnosis of an influenza-like illness is often unreliable, thus presenting major challenges to administering proper therapeutic treatment and tracking viral epidemiology⁴⁻⁵. Therefore, the ability for clinical laboratories to rapidly and accurately screen a large panel of viruses known to cause influenza-like illnesses is of great clinical importance.

To meet this need, Renois et al. assessed two commercially available RT-PCR DNA microarray detection systems for their potential application in routine diagnostics. In this study, 95 nasal swabs or nasopharyngeal aspirates were obtained from adult and pediatric patients presenting with symptoms consistent with influenza-like illnesses. Each sample was concomitantly analyzed with either a combination of the two DNA microarray detection systems or by classical real-time RT-PCR⁵.

From this analysis, the group was able to accurately identify both common and newly discovered viral strains in 68% of the patients. Of these infections, 15% presented as mixed viral infections containing various combinations of

Influenza A virus, Respiratory syncytial virus, Parainfluenza virus, and Human metapneumovirus. However, because the DNA microarray detection systems are qualitative in nature rather than quantitative, the group was unable to determine which virus was predominant within each of the mixed infections. Overall, both of the RT-PCR DNA microarray detection systems provide a promising diagnostic mechanism for the accurate and rapid detection of various known and emerging respiratory viral pathogens.

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