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Title: Rapid detection of major respiratory tract viral infections in acute exacerbation of COPD by highly sensitive multiplex PCR (mPCR)

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Body: Background :- The role of viruses in acute exacerbation of chronic pulmonary disease (AECOPD) needs further elucidation, since reliable clinical or biological markers to detect respiratory viruses are lacking. Objective :- To determine the frequency of respiratory virus infection by mPCR in acute exacerbation of COPD (AECOPD). Method :- Tracheal aspirates (TA) and Nasal pharyngeal aspirates (NPA) samples were collected from 137 hospitalized patients with AECOPD and analyzed by mPCR, using primers Inf A (Matrix Gene), Inf B (Matrix Gene), RSV (N Gene), PIV1 (N Gene), PIV2 (N Gene), PIV3 (N Gene) and hMPV (N Gene). Results :- The mean (SD) age of the entire group was 62.3 (11.4) years, among which 78.8% were males. The proportion of current smokers, ex smokers and non smokers was 35%, 46% and 19% respectively. The results for the detection of respiratory viruses were obtained within 4-5 hours. The overall prevalence of respiratory viruses in the entire group was 13.1%. These included RSV - 1(5.6%), Inf A - 11(61.1%), Inf B – 0%, PIV1 - 5(27.7%), PIV2 – 0%, PIV3 - 1(5.6%) and hMPV – 0%.

Conclusion :- Highly sensitive mPCR is a useful and rapid technique for detecting respiratory viruses from TA and NPA samples and may prove helpful in early detection of the etiology of AECOPD.