

## The Study of Upper and Lower Respiratory Tract Viral Infections in Exacerbation of Chronic Obstructive Pulmonary Disease

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**Background & Objectives:** Chronic obstructive pulmonary disease is a major cause of morbidity and mortality worldwide. There is increasing evidence that implicates viral infections as a major risk factor for exacerbations of chronic obstructive pulmonary disease (ECOPD). The aim of this research was to study the epidemiology of viral infections in exacerbated patients with chronic obstructive pulmonary disease.

**Methods:** In this descriptive cross-sectional study respiratory syncytial viruses (RSV), Influenza viruses A, B and C, Parainfluenza viruses 1, 2 and 3, picornaviruses, corona viruses, adenoviruses, HMPV (Human metapneumovirus) and human bocavirus (HBOV) were screened using nested PCR from 111 sputum, nasal lavage, and throat wash samples of patients with COPD exacerbation.

**Results:** A total of 43.24% of samples were positive for under study viruses. Influenza viruses, RSV, parainfluenza, picornaviruses, corona viruses, adenoviruses, HMPV and HBOV were detected in 3.6% (2 cases had type A and 2 cases had type C), 2.7% (all had type B), 1.8% (all had type 1), 21.6% (12 had rhinovirus and 12 had enterovirus), 17.12% (8 cases had OC43, 10 cases had 229E, and 1 case had NL63), 5.4%, 0.9% and 0.9% of under study patients, respectively. A total of 13 cases had co-infections.

**Conclusion:** This study is the first research on investigation of wide spectrum respiratory viral infection in patients with ECOPD in Iran. This study research Picornaviruses and corona viruses were detected to be the most common cause of infection. Viral infection can be detected at chronic obstructive pulmonary disease exacerbation and this highlights the need for continued research by the addition of the viral agent variety.

**Keywords:** COPD Exacerbation; Viral Respiratory Infection; COPD; Human Metapneumovirus; Human Bocavirus