

# Evaluation of serum levels of Decoy Receptor 3 and IL-6 in COPD patients

## Abstract

**Background & Objective:** *The serum decoy receptor 3 (DcR3) level increases in chronic inflammatory diseases. The present study aimed to examine serum DcR3 and IL-6 levels in patients with stable and acute exacerbation of chronic obstructive pulmonary disease (COPD) and the correlation of this markers with airflow limitation.*

**Methods:** *We measured serum DcR3 and IL-6 levels in 60 COPD patients (30 stable COPD (SCOPD), and 30 acute exacerbation of COPD (AECOPD)), and 30 control subjects and compared them with airflow limitation according to the COPD stage in the Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) criteria, peripheral O<sub>2</sub> saturation (SpO<sub>2</sub>), and COPD Assessment Test (CAT) score. We also tested the association of serum DcR3 level with COPD patients' clinical parameters.*

**Results:** *Both serum DcR3 and IL-6 levels increased with increasing severity of airflow limitation in SCOPD and AECOPD groups ( $P < 0.01$  to  $P < 0.001$ , respectively). It also increased in patients with AECOPD group compared with SCOPD group in GOLD stages III-IV ( $P < 0.05$  to  $P < 0.001$ , respectively). In addition, there was a significant positive correlation between serum DcR3 level and IL-6, CAT score and Smoking history (per year).*

**Conclusion:** *The study showed that serum DcR3 level increased with an increasing severity of airflow limitation in COPD patients, markedly in acute exacerbation phase. This increase was associated with a reduced quality of life and increased severity of hypoxia. These results suggest that DcR3 in COPD patients may be participate with its pathophysiology.*

**Keywords:** *Chronic Obstructive Pulmonary Disease, Decoy Receptor 3, Interleukin-6, Health-Related Quality of Life.*