

# Infections associated with chronic obstructive pulmonary disease

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## Editorial

In the past three decades, new molecular, cellular, and immunological techniques used to study the pathogen-host interaction have been applied in researches of the role of the pathogenic organisms in chronic obstructive pulmonary disease (COPD), and contributes to considerably new evidences that infection is the major cause and pathogenesis of COPD exacerbations. Not all acquisitions of pathogenically bacterial or viral organisms are followed by COPD exacerbation, but 50% of exacerbations are caused by bacterial infections. History of pulmonary tuberculosis and chronic respiratory symptoms are the main determinants of COPD patients co-infected with human immunodeficiency virus (HIV). Fungi, particularly *Pneumocystis jiroveci* has undefined role, but a recent case report concluded that there was possible association between COPD and mild immunosuppressive status for the development of Pneumocystosis pneumonia in COPD patients without HIV infection. *Haemophilus influenzae* takes the major role in both exacerbated and stable COPD, whereas rhinovirus takes the major role in exacerbated COPD. *Helicobacter pylori*, a slow-growing, microaerophilic, gram-negative bacterium, particularly of the high virulent cytotoxic-associated gene-A (CagA) positive strains which colonizes gastric mucosa and elicits both immune and inflammatory lifelong responses, with release of various host-dependent and bacterial cytotoxic mediators, has been identified in several extragastric diseases. Some previous reports demonstrated that the risk of chronic bronchitis may be increased in patients infected with *Helicobacter pylori*. A recent study revealed that 57.5% of COPD patients had *Helicobacter pylori* IgG seropositivity, whereas only 37.5% of the controls had. *Pseudomonas aeruginosa* accounts for 5-10% of exacerbated COPD patients with advanced stage, demonstrated in a recent study.

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## Conclusion

In conclusion, the most important bacterial causes of COPD exacerbations are non type able *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Moraxella catarrhalis*, and *Chlamydia pneumoniae* that account for 10-30% of the COPD exacerbations.

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## Conflict of interest

The author declares no conflict of interest.