A STUDY OF MICROBIOLOGICAL PROFILE IN OBSTRUCTIVE PULMONARY DISEASE IN A TERTIARY CARE HOSPITAL THANJAVUR.

ABSTRACT

BACKGROUND AND OBJECTIVES

COPD is a chronic slowly progressive disorder, characterized by airways obstruction emphysema, and chronic bronchitis, often clinically grouped together and referred to as chronic obstructive pulmonary disease, damages both the acinar level (emphysema) and bronchial level (bronchitis). Because of increase in smoking, environmental pollutants and other noxious exposures, the incidence of COPD has increased leading to significant morbidity and mortality. Bacterial infections are the most common observable cause of acute exacerbation in COPD. Acute exacerbation is characterized by increase in cough, dyspnoea and sputum production. The aim of our study is to find out the prevalence of microbial pathogens in COPD patients, with special reference to antibiotic susceptibility and their resistance pattern from hospital data.

SETTINGS AND DESIGN

It was a prospective study carried out at the Institute of Microbiology, Thanjavur Medical College in association with the Department of Thoracic Medicine at Thanjavur Medical College Hospital, Thanjavur from April 2016 to September 2017.
MATERIALS AND METHODS

The study population consists of 100 patients admitted in Thoracic Medicine Unit presenting with signs and symptoms of COPD. All the respiratory samples were subjected to direct gram staining, culture, biochemical reaction and the isolates were identified according to standard techniques. Antibiotic sensitivity was done by Kirby-Bauer method according to CLSI standard.

RESULTS

COPD was common in the age-group of 40-60. Tobacco smoking was strongly associated with the study group. Cor pulmonale 46% was the most common complication. Positive bacteriological culture was obtained in 43% of cases. Mixed infection among COPD patients was found in 10% of culture positive cases. Sputum purulence was significantly correlated with culture positivity.

The commonest organism in the respiratory samples in COPD patients were gram negative bacteria 86% as compared to gram positive bacteria 14%. Among gram negative organisms Klebsiella pneumoniae 43% was the most commonly and significantly isolated organism followed by Pseudomonas aeruginosa. Prevalence of extended spectrum β-lactamase 43%. Multi drug resistance in Pseudomonas aeruginosa 19%. Presence of MRSA 50%. Among the fungal isolates were Candida albicans 41%, Aspergillus niger 23%, Aspergillus flavus 18% and Aspergillus fumigates 18%. Haemophilus influenza and Mycoplasma were not isolated.

CONCLUSION

To conclude, gram negative bacteria were more frequently isolated in our patients. Early antimicrobial treatment depending on the antimicrobial sensitivity leads to reduction of increasing burden of antibiotic resistance.