

Correspondence:**Trends in the presentation of acute exacerbation of chronic obstructive pulmonary disease requiring admission to ICU: experience at a tertiary care teaching hospital in South India**

Chronic obstructive pulmonary disease (COPD) is a common, and preventable disease. It is the third most common cause of death in the world¹. Acute exacerbation of COPD (AE-COPD) is a common cause of hospital visits and leads to an increase in morbidity and mortality². AE-COPD is characterized by acute deteriorations of the patient's clinical status; worsening of health-related quality of life, lung function, and physical activity; disease progression; and an increased risk of death. Very little published data are available, especially from India, about the trends and seasonal variations of AE-COPD. This prompted us to undertake the present study.

We retrospectively studied the time trends and seasonal variations in 162 patients with AE-COPD requiring admission to the medical intensive care unit (MICU) during the period January 2012 to December 2014 at our tertiary care teaching hospital, Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati, located in Andhra Pradesh State in South India (13.4 °N, 77.2 °E), where there is 8-10 hours of cloud-free sunlight per day with little seasonal variation.

As described previously¹, AE-COPD is diagnosed if all of the following criteria were present at the time of admission to MICU: (i) recent rapid worsening of dyspnoea; (ii) increase in sputum purulence; and (iii) increase in sputum volume. Patients were eligible for only a single enrollment in this study. All the

patients were evaluated and managed as described previously¹.

Their mean (\pm standard deviation) age was 64.1 ± 10.3 years; there were 131 (81%) males. All males were bidi smokers; all women were using domestic fuel. The year wise distribution of cases is shown in Figure 1. There was a consistent increase in the number of cases with AE-COPD with each passing year from 2012-14. The month-wise distribution of the cases is shown in Figure 2. Majority of the cases were found clustered during March, May and September months. Comparison of the observations from the present study with another published study² is shown in Table 1. The reasons and mechanisms underlying the increase in the occurrence of AE-COPD is most likely due to a multitude of factors. Factors like physiological effects of climate, changes in weather, occurrence of respiratory tract infections, air pollution, and other variables may themselves have seasonal periodicity independent of environmental temperatures. Also, there was no increase in the incidence of AE-COPD in the months of December or January, when the lowest temperatures are recorded in our region. Our observations suggest that AE-COPD in our part of the country is probably not related to climatic changes, but due to the other causes like infection, non-compliance with inhalational bronchodilators, recent travel, among others. Data regarding time-trends in presentation of

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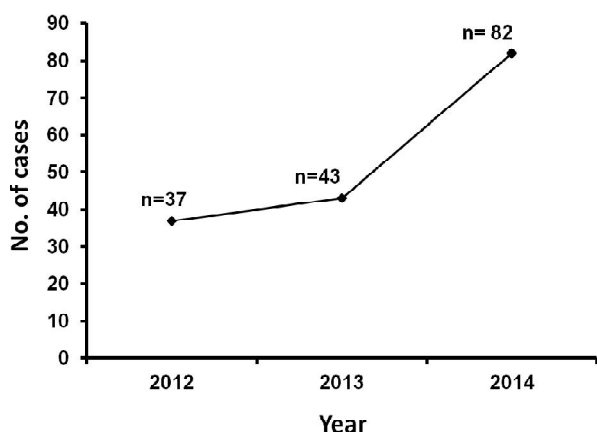


Figure 1: Year-wise distribution of cases with acute exacerbation of COPD

COPD= Chronic obstructive pulmonary disease

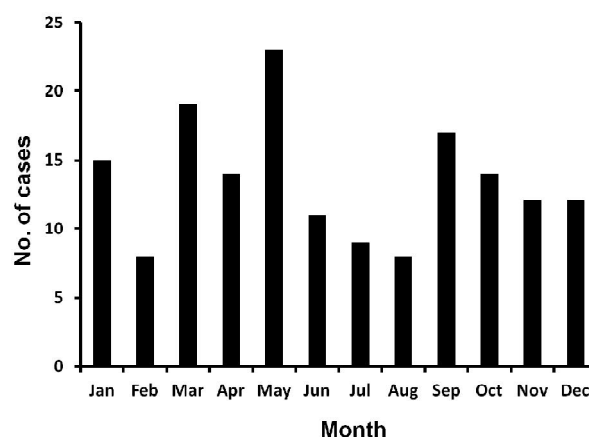


Figure 2: Month-wise distribution of the cases with acute exacerbation of COPD

COPD=Chronic obstructive pulmonary disease

Table 1: Comparison of present study with another published study

Variable	Rabe KF et al (2013) ²	Present study
Place of study	25 countries (northern hemisphere)	Tirupati
No. of patients	2691	162
Study design	Randomized, double-blind, parallel group study	Retrospective
Age [mean ± SD (years)]	63 ± 9	64 ± 10
Male : Female	70:30	81:19
Highest no. exacerbation (month)	January	May
Lowest no. exacerbation (month)	August	February, August
Highest no. exacerbation (season)	Winter	Summer
Lowest no. exacerbation (season)	Summer	Winter

AE-COPD will be helpful in optimizing the limited ICU resources for better patient management.

REFERENCES

1. Mohan A, Premanand R, Reddy LN, Rao MH, Sharma SK, Kamity R, Bollineni S. Clinical presentation and predictors of outcome in patients

with severe acute exacerbation of chronic obstructive pulmonary disease requiring admission to intensive care unit. BMC Pulm Med 2006;6:27.
 2. Rabe KF, Fabbri LM, Vogelmeier C, Kögler H, Schmidt H, Beeh KM, et. al T. Seasonal distribution of COPD exacerbations in the Prevention of Exacerbations with Tiotropium in COPD trial. Chest 2013;143:711-9.

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