

# Assessment of Cases of Community Acquired Pneumonia at a Tertiary care Teaching Hospital

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## ABSTRACT

**Background:** Community acquired pneumonia is the reason for morbidity. The present study was conducted to determine cases of pneumonia in study population.

**Materials & Methods:** This study was conducted in the Department of Pulmonary Medicine, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha (India) on 124 patients of both genders. In all patients, clinical findings, radiographic findings and complications were recorded.

**Results:** Males were 68 and females were 56. Common findings were fever in 80%, chill in 65%, cough in 74% and confusion in 12%. Radiographical findings were consolidation in 34%, patchy infiltrate in 20%, pleural effusion in 40% and atelectasis in 6%. The difference was significant ( $P < 0.05$ ). Complications were septic shock in 5%, multiple organ failure in 4%, ARDS in 1%, respiratory failure in 4% and empyema in 2%.

**Conclusion:** Community acquired pneumonia (CAP) is one of the leading cause of infectious death. Common findings

were fever, chill, cough and confusion.

**Key words:** Community Acquired Pneumonia, Complication, Fever.

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## Article History:

Received: 01-06-2017, Revised: 03-07-2017, Accepted: 14-07-2017

### Access this article online

Website: <a href="http://www.ijmrp.com">www.ijmrp.com</a>	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.4.060	

## INTRODUCTION

The Community acquired pneumonia (CAP) is one of the leading is leading cause of infectious death in both developed and developing countries. It is associated with a significant morbidity and mortality. In a meta-analysis of studies of prognosis, the short-term mortality in CAP ranged from 5.1% for patients treated in an ambulatory or hospital setting to 36.5% for patients treated in an intensive care unit.<sup>1</sup>

According to official estimate from the WHO for the year 2000, two thirds of all these deaths were in just 10 countries and were maximum in India. More than 20% of world's pneumonia deaths still occur in India, resulting in greater than 370,000 child deaths annually. Different studies, both community as well as hospital based, have highlighted a variety of factors contributing to mortality in childhood pneumonia such as young age, low birth weight, under nutrition, anemia, lack of parental education, overcrowding, pollution at home, lack of exclusive breast feeding, lack of measles immunization and severe disease at presentation.<sup>2</sup> The condition is defined as pneumonia not acquired in a hospital or a long term care facility. Despite availability of potent new antimicrobials and effective vaccine, an estimated 5.6 million cases of CAP occur annually in the United States. Patients with CAP often present with cough, fever, chills, fatigue, dyspnea,

rigors and pleuritic chest pain. When a patient presents with suspected CAP, physicians should first assess his need for hospitalization using mortality prediction tools such as the pneumonia severity index combined with clinical judgment.<sup>3</sup> The present study was conducted to determine cases of pneumonia in study population.

## MATERIALS & METHODS

This study was conducted in the Department of Pulmonary Medicine, Kalinga Institute of Medical Sciences, Bhubaneswar, Odisha, India. It included 124 patients of both genders. They were informed regarding the study and written consent was obtained. Ethical approval was obtained prior to the study.

General information such as name, age, gender etc. was recorded in the case history performa. Patients were diagnosed based on (temperature  $> 38^{\circ}\text{C}$ , cough or expectoration) or at least two minor criteria (pleuritic chest pain, dyspnea, leukocytosis i.e. white cell count  $> 12,000/\text{mL}$ , altered mental status, or signs of lung consolidation by clinical examination). In all patients, clinical findings, radiographic findings and complications were recorded. Results were subjected to statistical analysis using chi-square test. P value less than 0.05 was considered significant.

**RESULTS**

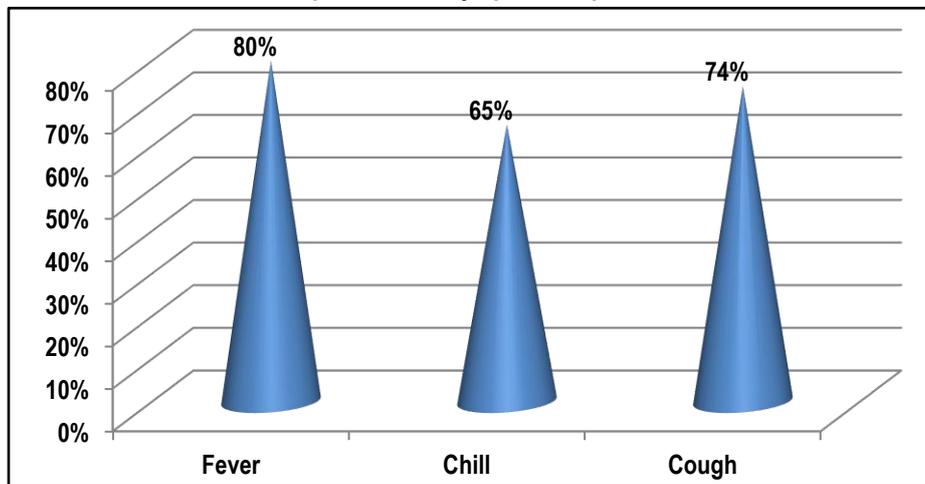
Table I shows that males were 68 and females were 56. Graph I shows that common findings were fever in 80%, chill in 65% and cough in 74%. The difference was significant ( $P < 0.05$ ). Graph II shows that radiographical findings were consolidation in 34%,

patchy infiltrate in 20%, pleural effusion in 40% and atelectasis in 6%. The difference was significant ( $P < 0.05$ ). Graph III shows that complications were septic shock in 5%, multiple organ failure in 4%, ARDS in 1%, respiratory failure in 4% and empyema in 2%. The difference was significant ( $P < 0.05$ ).

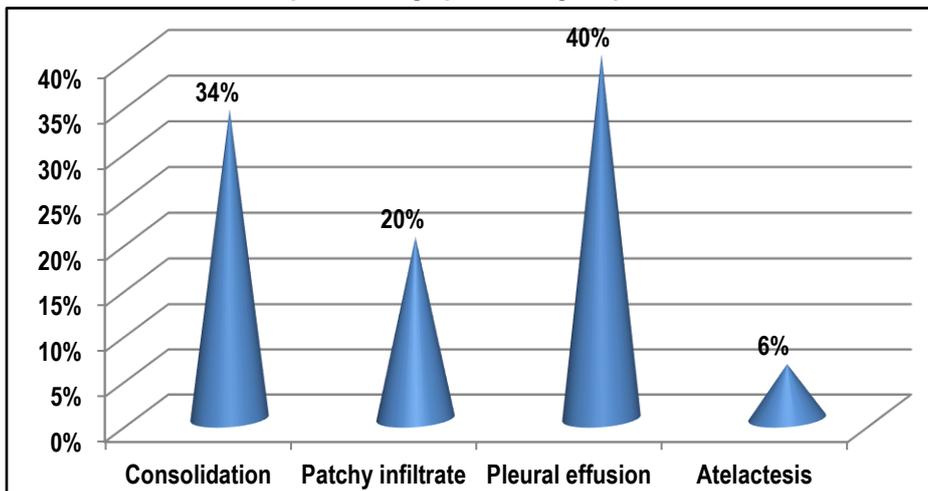
**Table I: Distribution of subjects**

Total- 124		
Gender	Males	Females
Number	68	56

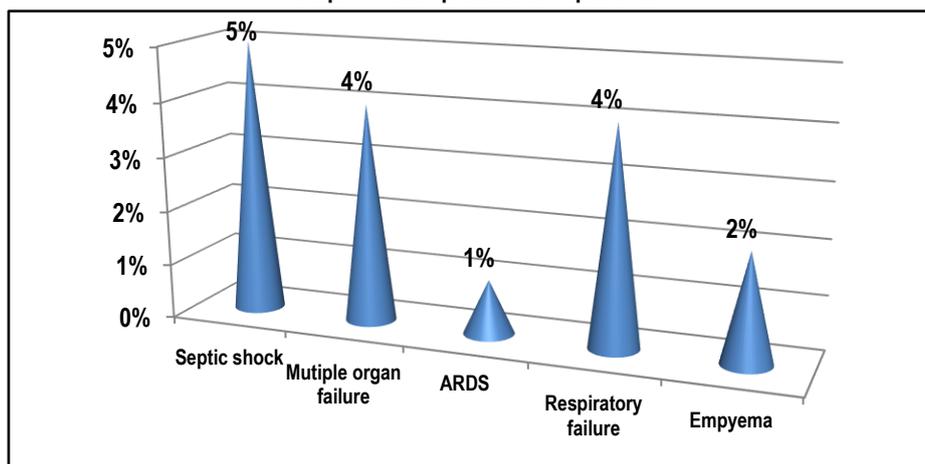
**Graph I: Clinical symptoms in patients**



**Graph II: Radiographic findings in patients**



**Graph III: Complications in patients**



## DISCUSSION

Bedside evaluation of history and physical signs supplemented by a chest radiograph would remain the cornerstone of initial clinical assessment at most treatment facilities in resource-limited countries. The risk factors for deaths due to pneumonia vary between countries, regions and communities.<sup>4</sup> Frequently studied factors are young age, low birth weight, under nutrition, anemia, lack of parental education, overcrowding, indoor air pollution, lack of exclusive breast feeding, lack of measles immunization, co-morbidities such as congenital heart diseases and other congenital anomalies and severity at presentation to hospital. The low risk patients who are

admitted with community acquired pneumonia, stay in hospital for more than 5 days and majority of them (48.4%) are females.<sup>5</sup>

CAP is a frequent cause of admission and death among elderly patients but there is little information on age and sex specific incidence, pattern of care (intensive care unit admission and mechanical ventilation) resources use (length of stay and hospital costs) and outcome (mortality). Severe CAP is a major cause of mortality and morbidity worldwide, with estimated mortality rates ranging from 30% to 50%. Early initiation of appropriate antibiotic therapy is of paramount importance due to the high mortality of this illness.<sup>6</sup>

We found that common findings were fever in 80%, chill in 65%, cough in 74% and confusion in 12%. This is similar to Djelantik et al.<sup>7</sup> Reechaipichitkul et al<sup>8</sup> conducted a study in which a total of 329 patients (187 males) were admitted with CAP. Two-third of patients had underlying co-morbid medical illnesses. Complications developed in 15.7% cases and the overall mortality rate was 11%. Risk factors were identified on initial clinical assessment, laboratory and radiological features and during hospital course. On admission elevated blood urea, new onset of confusion, abnormal liver function test, low serum albumin, cardiomegaly and presence of underlying malignancy were strongly associated with increased mortality. Failure to respond to therapy was associated with a high risk of mortality as depicted by complication during hospital stay.

We found that common radiographical findings were consolidation in 34%, patchy infiltrate in 20%, pleural effusion in 40% and atelectasis in 6%. The complications were septic shock in 5%, multiple organ failure in 4%, ARDS in 1%, respiratory failure in 4% and empyema in 2%. This is in agreement with Marrie et al.<sup>9</sup>

Kaplan et al found that out of 160 patients, majority respondents 88 (55%) were males ( $P < 0.05$ ), while 90 (56.25%) had rural residents predominance ( $P < 0.05$ ). It revealed 140 (87.5%) respondents were married ( $P < 0.05$ ), while 18 (11.25%) were < 20 years, 68 (42.5%) were between 20-40 years, 58 (36.25%) from 41-60 years and 16 (10%) were > 60 years of age. There were 110 (68.75%) illiterates from lower socio-economic class. Haemoglobin level was 8-10 gm/dl among majority 80 (50%), and 34 (21.75%) were Diabetics. CAP is frequent among males, rural residents, illiterate, anaemic, diabetics and lower socio-economic married patients from 20-40 years of age.<sup>10</sup>

## CONCLUSION

Community acquired pneumonia (CAP) is one of the leading is leading cause of infectious death. Common findings were fever, chill, cough and confusion.

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**Source of Support:** Nil. **Conflict of Interest:** None Declared.

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**Cite this article as:** Sudesh Chander Chaudhary. Assessment of Cases of Community Acquired Pneumonia at a Tertiary care Teaching Hospital. *Int J Med Res Prof*. 2017; 3(4):263-65. DOI:10.21276/ijmrp.2017.3.4.060