

A study of clinical profile of community acquired pneumonia at a tertiary care hospital

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Abstract

Causes of CAP include bacteria, viruses, fungi, and parasites. After achieving a correct diagnosis, the second step is to define if the patient will receive outpatient treatment or hospitalization. Ours was a clinical, prospective, observational and open study. The study subjects were community acquired Pneumonia patients admitted with signs and symptoms suggestive of Pneumonia. After obtaining a detailed history, complete general physical examination and clinical examination the patients were subjected to relevant investigations. The complete data was collected in specially designed case recording form and transferred into a Master chart which is then subjected to statistical analysis. We studied 100 cases of Pneumonia, out of which 5 patients presented with Confusion, 69 patients presented with raised Blood Urea Nitrogen, 11 patients with raised Respiratory rate, and 9 patients with Hypotension. CURB AGE score of 0 was observed in 26 patients, score 1 in 22 patients, score 2 in 24 patients, score 3 in 20 patients, score 4 in 2 patients, score 5 in 4 patients and score 6 in 2 patients. Prognosis was good in patients aged less than 50 years and those without any comorbidity. Fever was the most common symptom of presentation.

Keywords: CURB Age, hypotension, fever

Introduction

In 1901 William Osler described pneumonia as the "captain of the men of death". Pneumonia has been considered a health problem for ages. Despite being the cause of significant morbidity and mortality, Pneumonia is often misdiagnosed, mistreated, and underestimated^[1].

The Pneumonia is typically classified as Community-acquired, Hospital-acquired or Healthcare-associated. Community-acquired pneumonia (CAP) is a major cause of morbidity and mortality worldwide^[2].

Community-acquired pneumonia (CAP) is a disease in which individuals who have not recently been hospitalized develop an infection of the lungs (pneumonia). Lower respiratory tract infections (LRTIs), including CAP, were ranked third in a list of the 30 leading causes of death worldwide in 1990. Mortality rates are low (< 2%) in CAP patients treated as outpatients, but are higher (5 to 20%) among patients hospitalized for CAP and are highest (up to 50%) in patients admitted to the intensive care. The importance of CAP is increasing

economically since it is considered the leading cause of absence to jobs, incapacity and activity restriction in developing countries^[3].

Causes of CAP include bacteria, viruses, fungi and parasites. After achieving a correct diagnosis, the second step is to define if the patient will receive outpatient treatment or hospitalization. Clues for hospital admission is one of the most important aspect in the treatment of a patient who suffers from CAP. Admission decision is a complex and difficult issue that depends on the severity of the patient's illness and on some specific circumstances such as social conditions, home support, patient or relatives preferences which may become determinant factors in decision making. Research into community acquire pneumonia over the past two decades has focused on developing tools to measure the severity of illness^[4].

Severity assessment is an important early step in the management of patients presenting with community acquired pneumonia. Various pneumonia-specific scores, generic sepsis scores and predictive biomarkers have been proposed as tools to aid clinicians in key management decisions. However, there is no uniform agreement about the optimum severity assessment tool to use. This review provides a summary of current evidence surrounding severity assessment in adult patients presenting with community acquired pneumonia^[5, 6].

Methodology

The study was clinical, prospective and observational study. After obtaining detailed history, a complete general physical examination and systemic examination the patients will be subjected to relevant investigations, after approval by ethical committee. The complete data will be recorded in a specially designed Case Recording Form. The data collected will be transferred in to a Master Chart, which is then subjected for statistical analysis. Patients are selected with the following Inclusion and Exclusion Criteria.

Inclusion criteria

1. All patients aged above 14 years.
2. Patients presenting with history and examination findings suggestive of Acute Pneumonia.

Exclusion criteria

1. All patients aged below 14 years.
2. Patients developing features of pneumonia after 1 week of admission. 3 Patients developing ventilator associated pneumonia.

Sample size and design: A total of 100 cases of community acquired Pneumonia were studied prospectively.

Results

Table 1: Age and Sex Distribution

Age (in Yrs)	Males		Females		Total	
	n	%	n	%	n	%
≤ 20	4	50.0%	4	50.0%	8	8%
21-30	5	50.0%	5	50.0%	10	10%
31-40	10	71.4%	4	28.6%	14	14%
41-50	10	62.5%	6	37.5%	16	16%
51-65	26	68.4%	12	31.6%	38	38%
>65	12	85.7%	2	14.3%	14	14%

Out of the 100 cases studied, 67 (67%) were males and the 33 (33%) were females. Their ages ranged from 16 years to 76 years with a mean of 49.34 ± 19.46 years. The ratio of Male: Female was 2: 1. The maximum incidence of 38% was seen in the age group between 51 to 65 years, of which 68.4% (26/38) were males.

Table 2: Sex Distribution of Presenting Complaints

Presenting Complaints	Males	Females	Total	
	n	n	n	%
Fever	67	31	98	98%
Cough	66	31	97	97%
Chest pain	1	2	3	3%
Breathlessness	42	17	59	59%
Altered sensorium	4	1	5	5%
Others	4	2	6	6%

Out of 100 cases, most common presenting symptom was fever most of the patients i.e. 98% (98/100), 60% had chills (60/100) and cough in 97% (97/100), of which 63% (63/100) had expectoration, shortness of breath was present in 59% (59/100), pleuritic chest pain in 3% (3/100), altered sensorium in 5% (5/100) other symptoms in the form of Pain abdomen, loose stools, vomiting, headache were complained by 6% (6/100) of patients.

Table 3: Associated Co-morbidities

Signs	Males	Females	Total	
	n	n	n	%
COPD	12	1	13	13%
DM	19	6	25	25%
PTB	4	1	5	5%
HTN	13	4	17	17%

(COPD-chronic obstructive pulmonary disease, DM-diabetes mellitus, PTB-pulmonary tuberculosis, HTN-hypertension).

In the present study COPD found in 13%, Hypertension in 17%, Diabetes mellitus in 25%, Old pulmonary tuberculosis in 5%.

(COPD-chronic obstructive pulmonary disease, DM-diabetes mellitus, PTB-pulmonary tuberculosis, HTN-hypertension).

Table 4: Sex wise distribution of clinical signs

Signs	Males	Females	Total	
	n	n	n	%
Pallor	1	5	6	6%
Cyanosis	16	6	22	22%
Pedal edema	1	2	3	3%
Hypotension	7	2	9	9%
Tachypnea	8	3	11	11%
Temperature	27	10	37	37%
Crepitations	48	18	66	66%
BBS	25	19	44	44%
BP/AP/WP	25	19	44	44%

(BBS-bronchial breath sounds, BP-bronchophony, AP-aegophony, WP-whispering pectoriloquy).

In the present study 22%(22/100) had cyanosis and 9%(9/100) had systolic BP<90mmhg. Tachypnea was present in 11%(11/100) and fever in 37%(37/100). Bronchial breath sounds, whispering pectoriloquy, aegophony, bronchophony was present in 44%(44/100) patients. Crepitations were present in 66%(66/100).

(BBS-bronchial breath sounds, BP-bronchophony, AP-aegophony, WP-whispering pectoriloquy).

Table 5: Sex wise distribution of Pneumonia lesions in X-ray

Complications	Males	Females	Total	
	n	n	n	%
Bilateral	3	0	3	3%
Lt. Lower Zone	19	18	37	37%
Lt. Mid Zone	1	1	2	2%
Lt. Upper Zone	2	0	2	2%
Lt. Upper & Mid Zone	1	0	1	1%
Lt. Mid & Lower zone	2	0	2	2%
Rt. Upper & Mid zone	1	0	1	1%
Rt. Lower Zone	30	13	43	43%
Rt. Mid & Lower zone	1	0	1	1%
Rt. Mid Zone	4	1	5	5%
Rt. Upper Zone	3	0	3	3%
Pleural Effusion	5	4	9	9%

(Rt-right, Lt-left)

Upper zone lesions were present in 5% with right more than left(3% and 2% respectively) and middle zone lesions were present in 7% with right more than left(5% and 2% respectively). Lower zone lesion constituted maximum of 70%(right 43% and left 37%). Bilateral lesions in 3% and pleural effusion in 9% were present. Lesions involving more than one zone also noted which most commonly included mid and lower zones i.e. 3%.

Discussion

In our study out of the 100 cases studied, 67 (67%) were males and the 33 (33%) were females. Their ages ranged from 16 years to 76 years with a mean of 49.34 ± 16.46 years. The ratio of Male: Female was 2:1. The maximum incidence of 38% was seen in the age group between 51 to 65 years, of which 68.4% (26/38) were males. There were 68(68%) patients aged >40 years.

S. Bansalet *al.* [7] in his study on Clinical and Bacteriological Profile of community acquired Pneumonia in Shimla, Himachal Pradesh reported that patients mean age was of 52.77 ± 18.1 years. There were 71.4% males and 29.6% were females with male to female ratio of 2.4:1. 74% were more than 40 years of age. Their ages ranged from 17 years to 93 years.

Viraphong *etal.* [8] in Southeast Asian J Trop Med public health reported, male: female ratio 1:1.4 with average age being 56.4 ± 19.8 years.

Bochud PY *et al.* [9] in Community-acquired pneumonia. A prospective outpatient study found 43 yrs as the average age of patients with pneumonia.

The incidence of maximum number of Pneumonia cases in the age group of above >40 years is comparable with S. Bansalet *al.* [7] studies. The finding of male preponderance is comparable with S. Bansalet *al.* [7] study that the incidence of pneumonia is more common in males than females.

Mean age of presentation was comparable with both the above studies i.e., S Bansalet *al.* [7] and Viraphong *et al.* [8] studies and also patients aged above 40 years was comparable with S Bansalet *al.* [7] studies.

S. Bansalet *al.* [7] study reported that most common presenting symptoms was cough in 97% and expectoration in 87% patients followed by fever in 90%, chills in 81%.

Out of 100 cases, most common presenting symptoms were fever i.e., 98% (98/100), 85% had chills (85/100) and cough in 97% (97/100), of which 82% (82/100) had expectoration.

S. Bansalet *al.* [7] study reported shortness of breath in 48%, pleuritic chest pain in 34%, hemoptysis in 14%, altered sensorium in 8.6%, nausea, vomiting and loose motions in 7.1% and abdominal pain in 5.7% patients. In our study shortness of breath was present in 59% (59/100), pleuritic chest pain in 3% (3/100), altered sensorium in 5% (5/100) other symptoms in the form of Pain abdomen, nausea, loose stools, vomiting, head ache was complained by 6% (6/100) of patients.

The present study has reported a higher incidence of fever as compared to the above-mentioned study. The next most common complaint in the present study was cough 97%, which was comparable to above study. Pleuritic chest pain was present in 3% which is less compared to S. Bansalet *al.* [7] studies.

In S Bansalet *al.* [7] study the most common clinical signs were crepitations in 98% and bronchial breath sounds in 47% patients. Other clinical signs included cyanosis in 27%, pleural rub in 26%, tachypnea in 24%, hypotension in 13%, pallor in 11%, pleural effusion in seven 10% and jaundice in 3% patients.

Fine and coworker [10] reported tachypnea in 47% & S. Bansalet *al.* [7] reported tachypnea in 24%. In the present study tachypnea was present in 11% (11/100).

Incidence of fever was 37% (37/100) in our study which was much higher compared to Fine and coworker [10] study.

In present study 22% (22/100) had cyanosis which was comparable to S. Bansalet *al.* [7] study.

The above two mentioned two studies reported similar incidence of hypotension compared to present study which was 9% (9/100).

Incidence of bronchial breath sounds, was comparable to S. Bansalet *al.* [7] study i.e., 44% and 47% respectively.

Crepitations were present in 66% (66/100) and in S. Bansalet *al.* [7] study it was 98%.

S. Bansalet *al.* [7] study reported lobar lesion in 80% and interstitial pattern in 20% patients.

In present study lobar lesions were present in 91% which was comparable to above study. Interstitial infiltration were present in 3% of our patients which was less compared to the above study. In our study right lower lobe was more commonly involved as in S. Bansalet *al.* [7] study. In present study 9% had pleural effusion which was comparable to 10% in S. Bansalet *al.* [7] study.

Conclusion

Community Acquired Pneumonia continues to be one of the most commonest infectious disease that we come across in our clinical practice and in particularly in Intensive care unit. It is also one of the commonest cause of mortality and morbidity in these settings.

1. In the present study Pneumonia was encountered in all the age group, commonest being >40 years.
2. It is invariably associated with various comorbid conditions, common being DM followed by COPD. Smoking is a well-known and important risk factor through altering mechanism of the host defence system.

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