"Clinical Profile Of Community Acquired Pneumonia"

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Abstract : Background: *Community acquired pneumonia (CAP) is an acute illness acquired in the community with symptoms suggestive of lower respiratory tract infection (LRTI) together with the presence of a chest radiography of intrapulmonary shadowing which is likely to be new and has no clear alternative cause.* ***Objective****: To study the clinical presentation of community acquired pneumonia (CAP) and the risk factors associated with community acquired pneumonia.* ***Methods:*** *Cross sectional, prospective study done at the Institute of Internal Medicine, Madras Medical College and Rajiv Gandhi Government General Hospital, Chennai from October 2016 to May 2017. 50 patients admitted with a clinical diagnosis of pneumonia were evaluated and non-infectious causes were excluded. Clinical data was collated and analysed.* ***Results:*** *Total of 50 patients were included in our study. 82% were male and 18% were female. The age of patients ranged from 19 years to 80 years, with a mean of 49.72 years overall. 68% of patients were from rural areas and 32% were from urban areas.86% of patients stayed in-hospital for 5-10 days, 10% for 11-15 days, and 4% for 16-21 days. Predisposing factors include hypertension, diabetes, COPD, smoking and alcoholism. Presenting symptoms include fever, cough, expectoration, dyspnea and chest pain. Examination findings included increased vocal fremitus/resonance, bronchial breathing, whispering pectoriloquy and crepitations.*
Keywords – *Community acquired pneumonia, Lower Respiratory tract infection, Consolidation*

I.   Introduction

Pneumonia is a disease known to mankind from antiquity. Pneumonia was described by William Osler as "The friend of the aged, allowing them a merciful relief from those cold gradations of decay, that make the last state of all so distressing". Community acquired pneumonia (CAP) is an acute illness acquired in the community with symptoms suggestive of lower respiratory tract infection (LRTI) together with the presence of a chest radiograph of intrapulmonary shadowing which is likely to be new and has no clear alternative cause.

Community acquired pneumonia is a common disorder with an incidence of about 20-30% in developing countries compared to an incidence of 3-4% in developed countries. The aetiology of CAP remains uncertain in many patients. Even with the use of extensive laboratory testing and invasive procedures, aetiological confirmation being achieved in no more than 45-70% of patients. Streptococcus pneumonia is the most commonly isolated pathogen.

II.   Objectives
1.   To study the clinical presentation of community acquired pneumonia (CAP)
2.   To study the risk factors associated with community acquired pneumonia (CAP)

III. Methodology
Study design:
Cross sectional, Human subjects, unicenter, cross-sectional prospective study.
Study Centre:
Institute of internal medicine
Madras medical college and Rajiv Gandhi government general hospital, Chennai
Study duration:
October 2016 to May 2017
Inclusion criteria:
Patients with new or progressive pulmonary infiltrates on chest radiograph together with at least two of the following
1.   Fever, cough, production of purulent sputum (or)
2.   Leucocytosis >10,000/mm^3
3.

Exclusion criteria:
Patients with radiographic or laboratory evidence suggestive of tuberculosis, acquired immunodeficiency syndrome (AIDS), leukaemia and those with chest infiltrates due to other causes such as congestive heart failure, pulmonary infarction, or obstructive pneumonia due to lung cancer, and patients receiving immunosuppressive treatment were excluded from the study.
Sample size:
50 patients

IV. Methodology:
In all patients, chest radiograph, complete haemogram, renal and liver function tests, fasting blood sugar and serum electrolyte estimation were done. Sputum was examined and subjected to Gram's staining and bacterial culture on blood agar and MacConkey's agar media.

Observations:
Our study included CAP patients with age ranging from 19 years to 80 years with a mean age of 50.29 years in males, 47.11 years in females and 49.72 years overall. The present study showed maximum incidence (36%) of CAP in the age group of 51-60 years.

Age	Males		Females		Total	
	No.	%	No.	%	No.	%
<20	1	2	0	0	1	2
21-30	3	6	1	2	4	8
31-40	6	12	2	4	8	16
41-50	8	16	3	6	11	22
51-60	16	32	2	4	18	36
61-70	5	10	1	2	6	12
>70	2	4	0	0	2	4
Total	41	82	9	18	50	100
Mean ± SD	50.29 ± 13.58		47.11 ± 11.99		49.72 ± 13.25	

Our study has shown higher incidence of CAP in males (82%) compared with females (18%) with a male:female ratio of 4.5:1.

Sex	No. of cases	Percentage
Male	41	82%
Female	9	18%
Total	50	100%

In our study it is observed that rural population was affected with CAP more frequently than urban population (68% and 32% respectively)

Urban/Rural	No. of cases	Percentage
Rural	34	68%
Urban	16	32%
Total	50	100%

Most patients (86%) required hospitalization for less than 10 days, 10% required stay between 11-15 days and only 4% for more than 15 days. The contribution of pneumonia by virtue of man hours among workers is significant

Duration (days)	No. of cases	Percentage
5-10	43	86%
11-15	5	10%
16-21	2	4%
Total	50	100%

Analysis of various predisposing factors has shown smoking to be the most common risk factor associated with CAP seen in 18 patients (36%) followed by COPD (20%) and alcoholism (20%). The other risk factors observed in our study include diabetes (8%) and hypertension (6%)

Risk Factor	No. of cases	Percentage
Hypertension	3	6%
Diabetes	4	8%
COPD	10	20%
Smoking	18	36%
Alcoholism	10	20%

Our study has shown that the predominant presenting symptoms in CAP are fever and cough with incidence of 100% each. Next to them are expectoration (84%) and breathlessness (80%) followed by chest pain (70%).

Symptom	No. of cases	Percentage
Fever	50	100%
Cough	50	100%
Expectoration	42	86%
Dyspnoea	40	80%
Chest pain	35	70%

In our study, the most commonly observed respiratory signs are increased vocal fremitus/resonance, and bronchial breathing which are present in 90% of patients each. The other signs include whispered pectoriloquy and crepitations.

V. Results

In our study, a total of 50 patients were included. 18% were female and 82% were male. The patients age ranged from 19 years to 80 years, with a mean of 49.72 years overall. 32% of patients were from urban areas and 68% from rural areas. 86% of patients stayed in-hospital for 5-10 days, 10% for 11-15 days, and 4% for 16-21 days. Predisposing factors include hypertension, diabetes, COPD, smoking and alcoholism. Presenting symptoms include fever, cough, expectoration, dyspnea and chest pain. Examination findings included increased vocal fremitus/resonance, bronchial breathing, whispering pectoriloquy and crepitations.

VI. Conclusion

Our study suggests that most patients with community acquired pneumonia at our institution are middle-aged men from rural areas, and the majority of patients require an in-hospital stay of 5-10 days for treatment. Common co-morbidities include hypertension, diabetes, COPD, smoking and alcoholism. Clinical features are fever, cough, expectoration, dyspnea, chest pain, increased vocal fremitus/resonance, bronchial breathing, whispering pectoriloquy and crepitations

VII.   Limitations

1. Small sample size
2. Selection bias may have occurred as our hospital is a reference centre and the findings cannot confidently be extrapolated to the general populations

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