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Original Research

Assessment of outcomes of community acquired pneumonia

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ABSTRACT:
Background: To assess outcomes of community acquired pneumonia. **Material and Methods:** Eighty- five cases of community-acquired pneumonia (CAP) of both genders were selected. Parameters such as duration of hospital stay, symptomatology, comorbidities, seasonal variation, radiological features, complications, outcome and causative organisms were analysed. **Results:** Age group 30-50 years comprised of 38 and >50 years had 47. Left side was involved in 45, right in 30 and bilateral in 10 cases. Radiological finding was lobar consolidation in 52 and bronchopneumonia in 33. Comorbidity observed was diabetes in 11, hypertension in 6 and CKD in 2 cases. Causative agent was bacterial in 36, fungal in 28, viral in 11 and other in 10 cases. The difference was significant (P< 0.05). Complications observed were respiratory distress in 2, pleural effusion in 5 and respiratory failure in 3 cases. The difference was significant (P< 0.05). **Conclusion:** Most of the cases identified causative organism were bacterial. Complications observed were respiratory distress, pleural effusion and respiratory failure.
Keywords: Community-acquired pneumonia, lobar consolidation, respiratory distress.

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INTRODUCTION

Community-acquired pneumonia (CAP) is not only a common cause of death but also the third leading contributor to lost disability-adjusted life years worldwide, especially in the elderly population.[1] While it is often expected that patients with CAP will return to their pre-pneumonia baseline within a short period of time many continue to suffer from significant deconditioning and loss of functional independence and wellbeing long after diagnosis.[2] Misunderstanding of recovery may in part be due to the common outcome measures used to ascertain the effectiveness of treatment responses, such as time to clinical stability, adverse events, readmissions, and hospital length of stay.[3]

The aetiology of CAP has been well established, the commonest being Streptococcus pneumoniae and risk factors being increasing age, smoking, and other comorbidities like diabetes mellitus, chronic obstructive pulmonary disease & chronic kidney disease.[4] The very high incidence of CAP and its common complications like para-pneumonic effusion, sepsis and need for admission to intensive care unit, makes it important for all physicians to have a good understanding of the disease.[5]

The risk factors for HCAP were defined as patients who were residents in a nursing facility, those who were hospitalized for more than 2 days within the past 90 days, and those who had recently received intravenous antibiotics, chemotherapy, home wound care, and hemodialysis within the past 30 days.[6,7] We performed this study to assess outcomes of community acquired pneumonia.

MATERIAL & METHODS

After considering the utility of the study and obtaining approval from ethical review committee, we selected eighty- five cases of community-acquired pneumonia (CAP) of both genders. Parents' consent was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Parameters such as duration of hospital stay, symptomatology, comorbidities, seasonal variation, radiological features, complications, outcome and causative organisms were analysed. The results were compiled and subjected for statistical analysis using

Mann Whitney U test. P value less than 0.05 was set significant.

RESULTS

Table I Patients distribution

Total- 85		
Gender	**Males**	**Females**
Number (%)	50 (58.8%)	30 (35.2%)

Out of 85 patients, males were 50 (58.8%) and females were 30 (35.2%) (Table I).

Table II: Assessment of parameters

Parameters	Variable	Number	P value
Age group (years)	30-50	38	0.12
	>50	47	
Side	Left	45	0.05
	Right	30	
	Bilateral	10	
Radiological	Lobar consolidation	52	0.02
	Bronchopneumonia	33	
Comorbidity	Diabetes	11	0.01
	Hypertension	6	
	CKD	2	
Causative agent	Bacterial	36	0.09
	Fungal	28	
	Viral	11	
	Other	10	

Age group 30-50 years comprised of 38 and >50 years had 47. Left side was involved in 45, right in 30 and bilateral in 10 cases. Radiological finding was lobar consolidation in 52 and bronchopneumonia in 33. Comorbidity observed was diabetes in 11, hypertension in 6 and CKD in 2 cases. Causative agent was bacterial in 36, fungal in 28, viral in 11 and other in 10 cases. The difference was significant (P< 0.05) (Table II).

Table III: Assessment of complications

Complications	Number	P value
Respiratory distress	2	0.12
Pleural effusion	5	
Respiratory failure	3	

Complications observed were respiratory distress in 2, pleural effusion in 5 and respiratory failure in 3 cases. The difference was significant (P< 0.05) (Table II).

DISCUSSION

Pneumonia is the third leading cause of death worldwide. In particular, the morbidity and mortality of pneumonia are much higher among the elderly aged 65 years or older. Therefore, it is an important issue because of aging population in many countries.[8]Pneumonia is one of the life-threatening infections of the lung parenchyma characterized by acute onset of symptoms like cough, pleuritic chest pain, fever, sputum production, and shortness of breath alone or in combination with variable degree of physical (crepitation, bronchial breath sound, effusion sign., etc), and radiologic findings (consolidation, infiltrations, effusion, etc).[9] Pneumonia can be classified in different ways: based on the origin of the site of patient, exposure to the infecting agent, it can be classified as community acquired or hospital acquired. The second way of classification is by using etiology and can be categorized as bacterial, viral, fungal, or parasitic.[10] Using the anatomy of the affected lung parts, it is possible to classify as lobar, interstitial, or bronchial. Taking clinical presentation in to account, it can be also categorized as typical or atypical, mild (walking pneumonia), or severe. Community-acquired pneumonia (CAP) is a pneumonia with a source of infection in the community.[11] We performed this study to assess outcomes of community acquired pneumonia.

Our results showed that age group 30-50 years comprised of 38 and >50 years had 47. Left side was involved in 45, right in 30 and bilateral in 10 cases. Radiological finding was lobar consolidation in 52 and bronchopneumonia in 33. Comorbidity observed was diabetes in 11, hypertension in 6 and CKD in 2 cases. Kassaw et al[12]assessed the outcomes and predictors of hospitalized severe community-acquired pneumonia patients. A total of 239 admitted patients with severe community-acquired pneumonia were enrolled in the study. An unfavorable outcome was observed in 105 (44%) patients; 24.27% was in-hospital all-cause mortality, 12.5% was nonresolution, 5.8% was complicated cases, and 1.26% were gone

against medical care for poor prognosis. After analyzing multivariable logistic regression, confusion (OR= 4.84; 95%CI: 1.47– 15.88), anemia (OR= 2.36; 95%CI: 1.01– 5.52), leukopenia (OR=4.38; 95%CI: 1.26– 15.25), leukocytosis (OR=3.15; 95%CI: 1.23– 7.96), elevated creatinine (OR=5.67; 95%CI: 1.72– 18.65), intubation (OR=7.27; 95%CI: 1.58– 33.37) and antibiotic revision during treatment for a different reason (OR=0.02; 95%CI: 0.01– 0.07) were variables significantly associated with unfavorable outcome.

Our results showed that causative agent was bacterial in 36, fungal in 28, viral in 11 and other in 10 cases. Complications observed were respiratory distress in 2, pleural effusion in 5 and respiratory failure in 3 cases. Kollanur et al[13] in their study there was a total of 78 medical records involving pneumonia cases. Out of these, 47 cases which were fitting into our criteria were analysed and included in the study. Out of the 47 patients, 27 were males (57%) and the remaining 20 were females (43%). Out of these 27 males, 15 were smokers. None among females were smokers. The maximum age of a patient admitted with CAP during the study period was 89 years, minimum was 14 years, with mean age being 47.68 years. The maximum duration of stay for patients hospitalized with CAP during the study period was 15 days and minimum was 1 day, with a mean of 5.83 days of hospital stay. Fever persisted in patients hospitalized with CAP for a maximum of 18 days and a minimum of 1 day, with the mean duration of fever being 14.98 days.

Hyun et al[14]included 933 cases (CAP, n = 557; HCAP, n = 264; HAP, n = 112). In the CAP and HCAP cases, Streptococcus pneumoniae (7.4% vs. 5.7%) and P. aeruginosa (9.2% vs. 18.6%) were the most common gram-positive and gram-negative pathogens. Staphylococcus aureus (methicillin-resistant, 2.7%; methicillin-susceptible, 2.4%) and carbapenem-resistant Acinetobacter baumannii (20.5%) were the most common Gram-positive and Gram-negative pathogens in the HAP group, respectively. Higher susceptibility to levofloxacin was observed in CAP and HCAP isolates than that to β-lactam agents. However, levofloxacin non-susceptibility was significantly higher in long-term care facility (LTCF)-onset HCAP compared to community-onset HCAP (43.6% vs. 22.7%, P = 0.014).

CONCLUSION

Most of the cases identified causative organism were bacterial. Complications observed were respiratory distress, pleural effusion and respiratory failure.

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