



Clinical Study of Community Acquired Pneumonias (CAP) in Children Under Five Years and Awareness About The Disease Among Mothers

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ABSTRACT

Background: Community Acquired Pneumonia (CAP) is a significant problem in developing countries and a leading cause of childhood morbidity and mortality [1]. The objective of the study was to record the clinical presentation of children diagnosed with pneumonia and to know attitude and knowledge of their mothers concerning community acquired pneumonia.

Method: A prospective observational study was conducted in the Pediatric ward of Smt. Kashibai Navale Medical College & General Hospital, Pune, India. Sixty cases of Community Acquired Pneumonias were recorded in children under five years of age and their mothers (n=60) were included in the questionnaire based study.

Result: A total of 60 children under five years of age were studied. The average age of the children in the study was 1 year 6 months. Male: Female ratio was - 1.31:1. Tachypnea was seen in - 90% (n=54) and tachycardia in 81.67% (n=49). Majority of the children were malnourished 71.67% (n=43) and anemic 83.33%; (n=50) . 90% (n=54) mothers of children admitted were unaware about pneumonia.

Conclusion: All febrile, tachypneic under five children should be evaluated for community acquired pneumonia (CAP). Mothers should be educated about pneumonias, sanitation and nutritional supplementation to decrease morbidity and mortality of children.

KEYWORDS

Community acquired pneumonia (CAP), Pediatrics, Awareness, Mothers.

INTRODUCTION:

Pneumonia is a form of acute respiratory infection that affects the lungs. It is the single largest infectious cause of death in children worldwide. It killed an estimated 922,000 children under the age of five in 2015, accounting for 15% of all deaths of children under five years old. It affects children and families everywhere, but is most prevalent in South Asia and sub-Saharan Africa [2]. More than 99% of all pneumonia deaths occur in developing countries. India's under-five death toll is higher than the deaths in Nigeria, Congo and Pakistan put together. 50% of World's Pneumonia deaths occur in India which means approximately 3.7 lakh children die of Pneumonia annually in India. India is among the 4 of 15 countries that are yet to introduce the newest generation of pneumococcal vaccines in their Immunization schedule. Only 69% children with pneumonia in India, are taken to a health facility, and only 13% get antibiotics [3].

Pneumonias can be caused by viruses, bacteria or fungi. Streptococcus pneumonia is the most common cause of bacterial pneumonia in children; Haemophilus influenzae type b (Hib) – the second most common cause of bacterial pneumonia; Respiratory Syncytial virus is the most common viral cause of pneumonia. The viruses and bacteria that are commonly found in a child's nose or throat can infect the lungs if they are inhaled. They may also spread via air-borne droplets from a cough or sneeze [2].

Preventing pneumonia in children is an essential component of a strategy to reduce child mortality. 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^[4-10].

AIM AND OBJECTIVE:

- To record the clinical presentation of children under five years of age diagnosed with pneumonia.
- To know attitude and knowledge concerning community acquired pneumonia in their mothers.

METHODOLOGY:

A prospective observational study was conducted from June 2015 to October 2015 on sixty children below five years of age admitted to the pediatric ward of a tertiary care hospital. The study protocol was approved by the institutional ethical committee. Inclusion criteria were children under five years of age diagnosed with pneumonia. Children with co-morbidities like meningitis or chronic respiratory diseases and whose parents did not give consent were excluded from the study. Their clinical presentation, anthropometric data, blood investigations & radiological findings were recorded from the case file. A pre-decided tested bilingual (Marathi and English) questionnaire was given to their mothers to know about their knowledge about pneumonias. Data analysis was performed with Microsoft Office Excel. Frequencies and percentages were reported amongst them.

RESULTS:

Sixty children who were admitted to the Pediatric ward in a period of five months were enrolled for the study. As seen in table no. 1, the minimum age reported was 45 days and maximum age reported in the study was 4 Years 10 Months.

TABLE NO 1: Age Distribution of children in the study:

Age Distribution	Number of Children
1 Month - 6 Months	17
>/= 7 Months - 1 Year	13
>/= 1 Year - 2 Years	15
>/= 2 Years - 5 Years	15

The average age of the children in the study - 1 Year 6 Months. The Male: Female ratio was - 1.31:1. On examination, all children were febrile and had symptoms of cough and cold. Crepitations & wheeze was seen in 50% (n=30) and only crepitations in - 30% (n=18) while only wheeze was seen in - 20% (n=12). Tachypnea was seen in - 90% (n=54). Tachycardia was observed in - 81.67% (n=49).

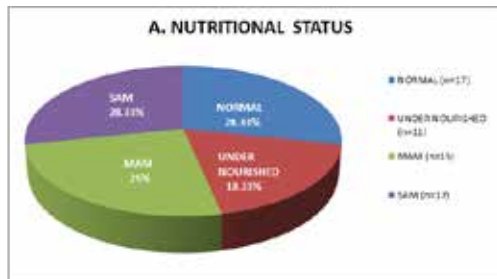


FIGURE NO A: SHOWING NUTRITIONAL STATUS

According to the WHO weight-for-length Reference chart [11], 71.67% children in the study were malnourished of which 25% were MAM and 28.33% SAM as shown in figure A.

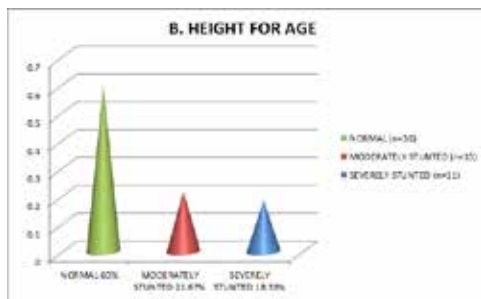


Figure no B : Showing Height for Age

According to the WHO Height-for-Age Reference chart [11], the study showed that 40% of the children had stunted growth.

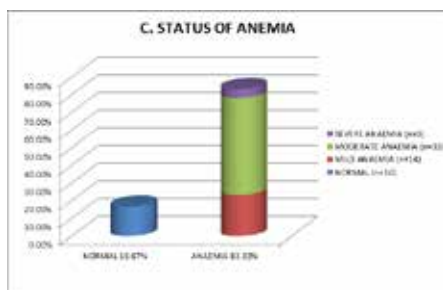


Figure no C: Showing status of Anemia

83.33% were anemic as shown in figure C.

Out of 60 cases, 35% (n=21) of the patients had chest radiographs suggestive of pneumonia. Haemogram showed leucocytosis in 60% (n=36) cases. The blood culture was positive in 12% (n=20) cases. Out of 60 cases studied, 43.33% (n=26) cases were low birth weight babies (< 2.5 kg).

Following are the results for questionnaire given to mothers of pneumonia patients:

Table no 2: The educational qualifications of the mothers were categorized for the study as follows:

Category	Educational qualification of mothers
I	Illiterate
II	< 10 Grade
III	10-12 Grade
IV	>12 Grade

Table 3: Knowledge of the Mothers about pneumonias?

Yes 10% (n=6)	No 90% (n=54)
I (n=1)	I (n=24)
II (n=1)	II (n=16)
III (n=0)	III (n=13)
IV (n=4)	IV (n=1)

Only 1 mother out of 60 mothers knew that the causative organisms of pneumonias are micro-organisms. Only 6.67% (n=4) mothers knew that vaccination can prevent pneumonia. 53.33% (n=32) mothers exclusively breastfed their children for the first six months.

DISCUSSION:

Community Acquired Pneumonia (CAP) refers to pneumonia (any of several lung diseases) contracted by a person with little contact with the healthcare system. The chief difference between hospital-acquired pneumonia (HAP) and CAP is that patients with HAP live in long-term care facilities or have recently visited a hospital. [12]. Nursing home-acquired pneumonia refers to infection acquired in an extended-care facility. Nosocomial pneumonia and hospital-acquired pneumonia describe infections acquired in the hospital setting. The signs and symptoms of acute pneumonia develop over hours to days, whereas the clinical presentation of chronic pneumonia often evolves over weeks to months [13].

In our study, the age group between 1 month and 6 months were affected the most in this study, this was also found in the study by CT Ezeonu et al. [14]. Out of the 60 cases studied, the ratio of Males: Females was 1.31:1. Similar ratio has been reported by Ramesh Bhat et al with a ratio of 1.34:1 [15] and Anil Kumar et al. [16]. Majority (71.67%) children in the study were malnourished as reported by [16]. Tachypnea was seen in 90% children and a similar report has been found in study by G. Arpitha (et al.) [17]. Bhaskaran P et al reported anemia in 83% children affected with ALRI, similar to our findings [18]. Leucocytosis (60%) was the major finding in the Haemogram reports. 35% Radiological reports were diagnostic of pneumonia. Similar results were reported by M. Harari [19]. 12% of the blood culture reports were positive. Similar result was found by Karalanglin Tiewsoh [20].

We found that knowledge about pneumonia and the vaccination available for it amongst mothers was as low as 10% and 6.67% respectively. The sample size of this study is not representative, and thus limitations of this research include the precision of the findings which should be interpreted with caution.

In summary, our results indicate that tachypnea, leucocytosis, anemia and positive radiological reports were major findings in the cases. Under nutrition, low birth weight and lack of exclusive breast feeding for the first six months risk the child to pneumonia. Since, pneumonia is a major cause of morbidity and mortality, lack of knowledge about the disease among mothers can be corrected by educating mothers about the disease and the importance of good nutrition, exclusive breast feeding, vaccination and sanitation at the domestic level. Despite a surprising lack of knowledge about the disease among mothers of children affected, the mothers were interested to know about the risk factors and vaccinations available for the disease. All febrile, tachypneic under five children should be evaluated for community acquired pneumonia (CAP). So, mothers should be educated about pneumonias, sanitation and nutritional supplementation to decrease morbidity and mortality of children.

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