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A STUDY ON PREVALENCE OF PNEUMONIA IN PEDIATRIC PATIENTS

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ABSTRACT

Pneumonia is one of the serious illness, which involves lung infection specifically alveoli. Nearly two million deaths are estimated to occur because of pneumonia in less than 5 years of age, and almost all of these occur in the developing world. Therefore, it is not a surprise that pneumonia is one of the most critical illnesses for children under 12 years old in many parts of the world including India. The objectives of this study are to develop a summary on the prevalence of pneumonia in Govt Hospital, to analyze the best practice to present this illness and lastly to determine an overview of which area that is widely affected by pneumonia. The results can assist doctors and the Government to take major precautions and preventive measures efficiently to the full extent. There is more than one major factor that leads to this critical illness, such as family background, environment. Therefore, the physicians should take major steps to prevent children suffering from pneumonia.

KEYWORDS: Prevalence, pneumonia, pediatrics, statistical analysis.

INTRODUCTION

Pneumonia is a common and potentially serious illness worldwide.[1] It remains the leading killer of young children despite of availability of simple, safe, effective and inexpensive interventions to reduce its capacity to kill. Childhood pneumonia is mainly a disease of poverty and results from sub-optimal child rearing and care seeking practices compounded by lack of access to healthcare.[2]

Pneumonia affects 156 million children under the age of 5 year, every year across the globe. More than two million deaths are estimated to occur because of pneumonia, and almost all of these occur in the developing world. India carries the largest burden of disease and deaths because of pneumonia, accounting for 43 million cases and 0.4 million deaths.[3]

A study done in New Delhi slums estimated that overall prevalence of acute respiratory infection among less than 5 years of children to be around 4.5% for a period of one month.[4] Pneumonia is defined as an inflammation of the alveoli and interstitial tissue of lungs due to infectious agents. Commonly used clinical WHO operational definition is based solely on clinical symptoms (cough, difficulty in breathing and tachypnoea).[5], [6]

Depending on the place of acquisition, pneumonia can be divided into Community Acquired Pneumonia (CAP) and Hospital Acquired Pneumonia (HAP), recently a third type Health Care Associated Pneumonia (HCAP) has been distinguished in adult patients.[5]

In developing countries low socio-economic status, malnutrition, low birth weight, non-exclusive breastfeeding, indoor air pollution, crowding, parental smoking, zinc deficiency, mother's experience as a caregiver, mothers age, lack of education in the mother, humid conditions, high altitude, vitamin-A deficiency, birth order and outdoor pollution were found as a possible risk factors associated with pneumonia among children.[7, 8] There are a large number of micro-organisms and viruses that can cause pneumonia. Pneumococcus is the leading cause of pneumonia and is the causative agent in 30-50% cases of pneumonia.

Respiratory viruses account for 15-40% of all admitted cases of pneumonia in infants and young children in developing countries and Respiratory Syncytial virus is the leading viral cause in most studies including India.[2, 9] These viruses and micro-organisms can be found in child's nose or throat, and can be spread via air-borne droplets or through Blood Stream Infections.[6] Serious preventions have to be taken by parents, Government and medical center in order to avoid more pneumonia phenomena among children, such as taking immunization against Hep-B, having adequate intake of nutrition, proving affordable and clean indoor stoves and encouraging good hygiene in crowded homes.

METHODOLOGY

It is a prospective and an observational study of all patients with a diagnosis of pneumonia who are admitted to the pediatric ward of Govt Hospital, from October 2015 to March 2016.

A patient, who comes to hospital, will be asked to sign consent form with their acceptance before including to this study. And a specially designed proforma was used to collect data which includes patient demographics, past medical history, family history, Birth history, parent's smoking background, co-morbidities, present medications prescribed for each patient by direct patient interview. Patient profiles were regularly monitored and follow up were performed on monthly basis for period of 6 months. To see the overall pattern of the data set, parent's smoking history, length of stay in hospital and co-morbidities.

RESULTS

This section describes the data analysis and the results obtained from the study. The main objective of this study is to develop a summary profile of the patient who came to Govt Hospital, Tirupati due to pneumonia. This summary is graphically shown in Fig 1-7.

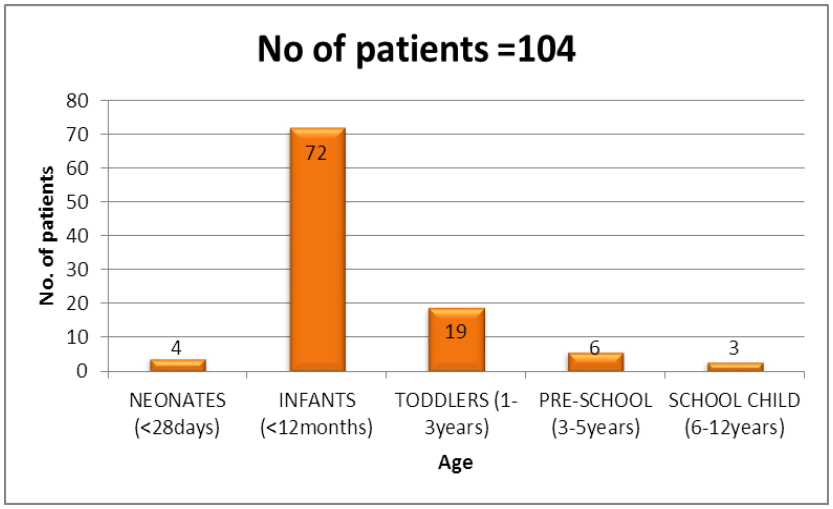

Fig-1: Number of patients based on age category.

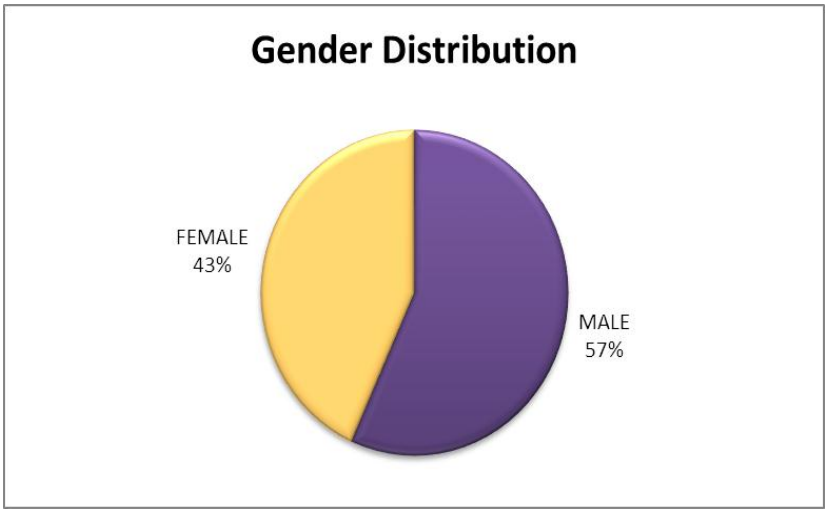

Fig 2: Percentage of male and female patients.

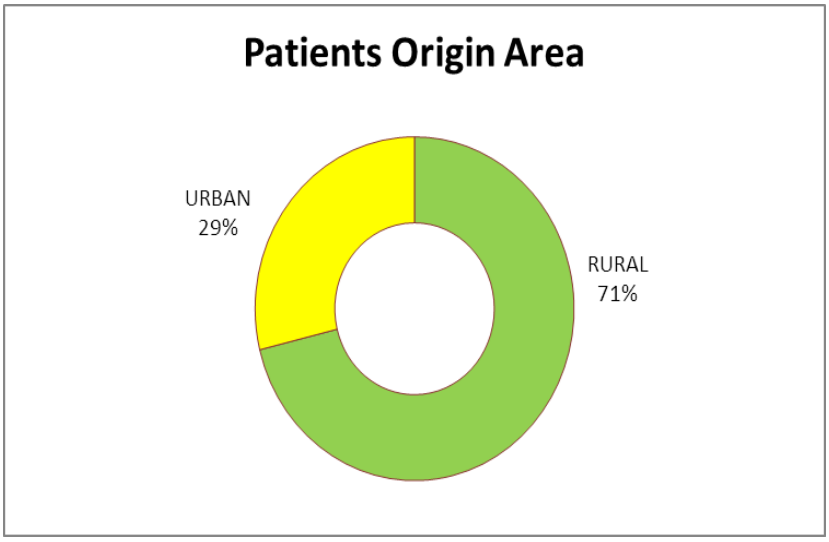

Fig 3: Percentage of patient origin area.

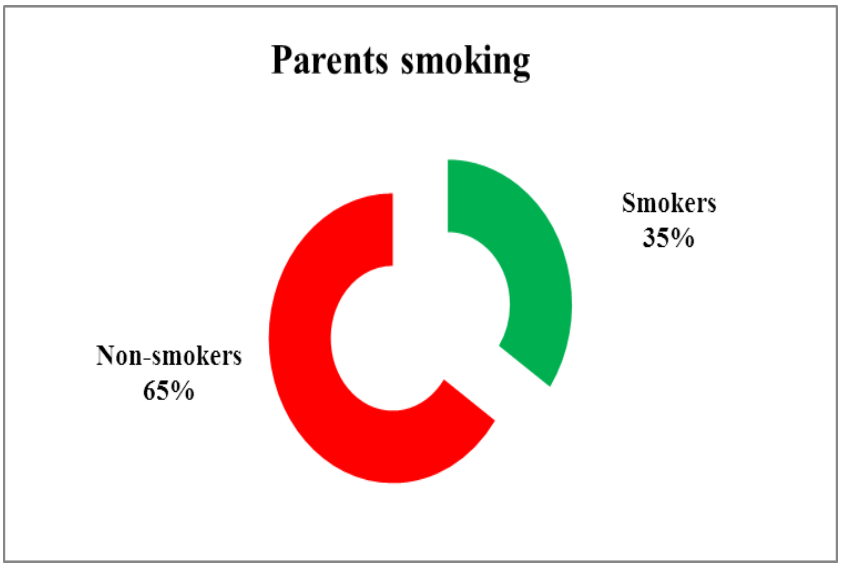

Fig 4: Percentage of parent smokers and non-smokers

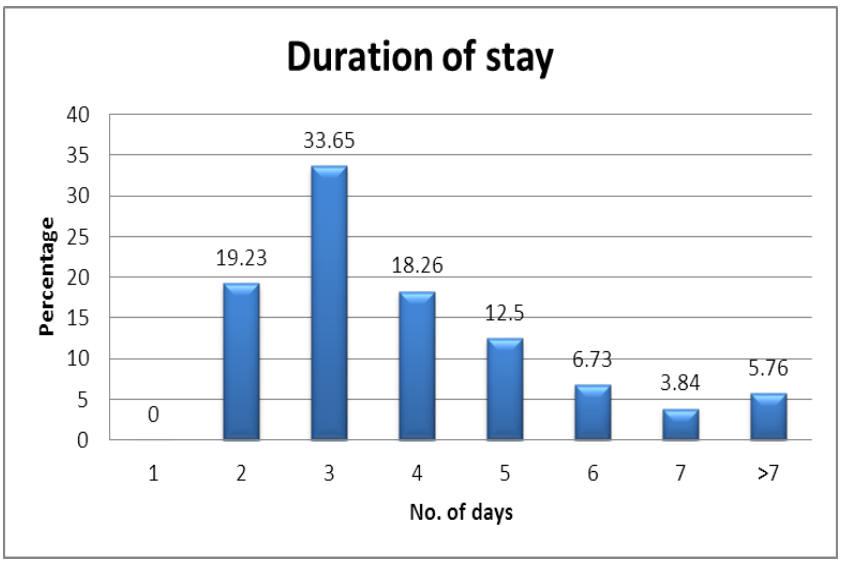

Fig 5: Percentage of patients admitted in the hospital by days.

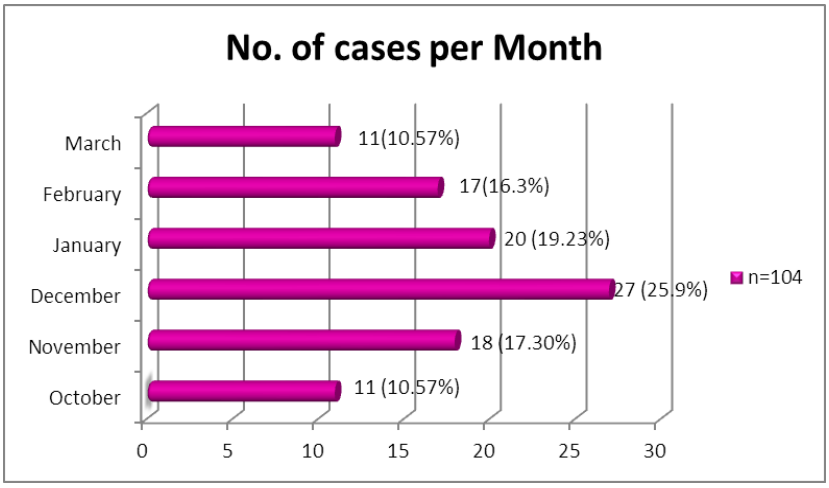

Fig 6: Month wise distribution of patients

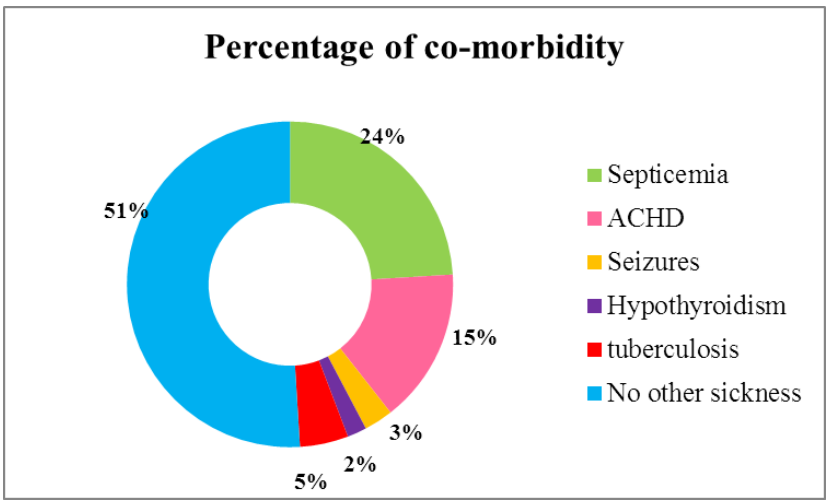

Fig 7: Percentage of co-morbidity

DISCUSSION

In our study, a total of 104 patients were included. Among these 72 patients were infants followed by toddlers (19), preschoolers (6), neonates (4), school child (3). In theses 104 patients, males (57%) were higher than females (43%). this study opposes with Gupta R et al. Our study shows that rural area patients (71%) were more prone to pneumonia than urban area patients (29%). In pediatric patients, parents are one of the reasons for this cause by smoking near the children's. In this study, parents who are non-smokers (65%) were higher than smokers (35%).this study supports with Gedefew Abeje Fekadu et al. In this study, majority of patients were admitted on December due to seasonal variations.

Most of the patients were admitted for 3days (33.65%), followed by 2 days (19.23%) and minimum of 5.76% of patients were admitted for more than 7days in whom the co-morbidities were more. this study supports with Suliadi F. Sufahani et al. Septicemia (24%)

was the major co-morbidity observed along with pneumonia followed by Acynotic Congenetical Heart Disease (ACHD-15%).

CONCLUSION

Our study concludes that pneumonia is one of the most dangerous disease affecting children under 12 years old. In these studies, infants were most commonly observed with pneumonia. Majority of male patients (<12months) were more prone than female patients. Rural area patients were more prone because of lack of hygiene conditions, lack of knowledge on good health and immunizations. Due to seasonal variation pneumonia is highly affect in the month of December. More multi-centered epidemiological surveys are required to be conducted to draw best statistical prevalence data on pneumonia in India

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