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ORIGINAL ARTICLE

Pneumonia in Children under five years old in KPK: Symptoms and presentation

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ABSTRACT

Background: The lung parenchyma is affected by pneumonia, an acute infectious disease that can be brought on by fungus, bacteria, or viruses. By vaccination, a healthy diet, and the abolition of environmental variables, pneumonia can be avoided. All worldwide deaths of children under the age of five are due to it.
Aim: To prevent pneumonia with easy steps, and can be treated with easy, affordable medications with adequate care, early detection, and prompt admission of sick children to hospitals.
Methods: This case series study was carried at pediatric department of district kohat hospital from august 2022 to Feb 2023. Ethical acceptance certificate was obtained from the hospital. Informed written consent was taken from those parents who were willing to answer and were fully qualified the inclusive criteria. Total 139 patients were enrolled in the study. The results were analyzed through spss-ver 24
Results: In clinical sign and symptoms highest ratio was seen in lethargy 33(23.74%) and lowest ratio seen in cyanosis 4 (2.87%), in gender wise the male 82(59%) presentation was more than females 57(41%). Lowest ratio of vaccination was seen in 2(28%) dose 6 and highest in non-vaccination was 21(44%) in dose 1.
Conclusion: The health planners should concentrate on the missed epi schedule. Efficacy, we must employ media like radio, television, and newspapers
Keywords: Pneumonia, education, health, presentation, Kohat

INTRODUCTION

Pneumonia, which is responsible for an estimated 1 million fatalities per year from infectious diseases in children, is most common in underdeveloped nations[1-2]. According to the UNICEF Pakistan report deaths due to pneumonia in children less than five year of age were 58000 in 2018[3]. Statistics show that although pneumonia mortality has dropped since 2000, it is still a major public health concern[4-5].

Streptococcus pneumonia, Haemophilus influenza type B, and respiratory syncytial virus have been identified as the main recognized causal microorganisms (RSV)[6]. Season and place have an impact on dispersion. There is still a lack of information regarding the etiology and epidemiology of pediatric pneumonia in poor nations[7].

According to study[8] estimates, among its 14.9 million residents, more than 900,000 cases of pneumonia in children under 5 are reported each year, resulting in nearly 8,000 fatalities. In a descriptive analysis, the most common reason for hospital admission—representing 18% of all admissions—was pneumonia. On the clinical appearance and etiology of probable pneumonia patients, however, there was a lack of comprehensive information[9].

The best defense against pneumonia is vaccination against Haemophilus influenza type b (Hib), pneumococcus, measles, and influenza. In wealthy nations, vaccination can avert at least a third of serious episodes and two-thirds of pneumonia-related fatalities. Pneumococcal conjugate vaccine (PCV), Hib vaccine, and influenza vaccine were all a part of national vaccination programs in 129, 192 and 102 member states, respectively, as of 2015[10-11].

If the proper treatments for this disease are not administered to children in a timely manner, not only will their physical and mental health be severely compromised, but even their lives could be in danger[12]. Providing nursing care in a preset way based on the child's state for a particular disease is the goal of comprehensive nursing intervention, a new kind of nursing technique[13].

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Pneumonia is estimated to occur annually in other high-income nations at a rate of 14.5 per 10,000 children ages 0 to 16 and 33 per 10,000 children under the age of 5[14].

METHODOLOGY

After ethical approval this case series study was conducted at pediatric ward at DHQ Kohat category A hospital. This hospital is 449 bed capacity entertaining 1500 patients pouring in from adjacent districts in OPD and accident & emergency departments on daily basis.
Inclusive criteria: Children with pneumonia were hospitalized if they met the following inclusive requirements: - Cough and/or dyspnea, - Tachypnea, as defined by the World Health Organization (WHO) in children between the ages of 2 and 12 months: breathing rate 50 cycles per minute; in children between the ages of 12 and 59 months: breathing rate 40 cycles per minute.
Exclusive criteria: Absence of wheezing at auscultation, - First symptoms appearing within the past 14 days, - Radiological confirmation of pneumonia in accordance with WHO. Wheezing during auscultation or minors whose parents or legal guardians refused to sign the informed consent statement were the exclusion criteria for cases.
Sampling technique: To identify the causes of pneumonia, questionnaires related to the disease were created. Each patient's questionnaire was gathered independently. Before filling out the questionnaire, the patient's attendant gave a brief explanation of the research study's objectives. All data of 139 patients was collected through non-probability sampling technique. Results were analyzed through spss-24 version.

RESULTS

Total 139 patients were enrolled in study after getting consent.

Table 1

Gender	n	percentages
male	82	59%
women	57	41%

Table 2: Clinical sign and symptoms

Feature	n%
Dyspnea	15(10.79%)
Lower chest in drawing	9(6.47%)
Cough	26(18.70%)
Pulmonary crackles	22(15.82%)
Rhonchi	9(6.47%)
Lethargy	33(23.74%)
Cyanosis	4(2.87%)
Diminished breath sound	10(7.19%)
Dullness to precaution	11(7.91%)

Table: 3 Epi vaccine schedule (n=139)

Dose	Vaccinated	Non vaccinated	Total
Bcg, opv, hep-b	27(56%)	21(44%)	48(34.53%)
Rota virus-1, pentavalent, opv-1, pneumococcal-1	18(53%)	16(47%)	34(24.46%)
Opv-2, pneumococcal-2, rota virus-2, penta valent-2	7(54%)	6(46%)	13(9.35%)
Opv-3, pneumococcal-3, ipv-1, penta valent-3	19(87%)	3(13%)	22(15.82%)
Mr-1, typhoid, ipv-2	11(73%)	4(27%)	15(10.79%)
mr-2	2(28%)	5(72%)	7(5%)

Table 4 Socio-economic status of family

Status	n	Percentages
Low	71	51%
Medium	62	45%
high	6	4%

DISCUSSION

Prior research in Khyber Pakhtoonkhwa, Pakistan, revealed vaccination rates of 65% in rural areas and 37.6% in hospitals[15-16]. Result we found was quite similar that 21% highest ratio was seen in first schedule dose of epi, as kohat hospital entertain adjacent patients at out-door department. Literacy rate of kohat is 44.1% in which female ratio is 23.5% & male 65.5% which shows their interest in keeping record of epi[17]. Lowest ratio was seen for non-vaccination was 3% for dose 4. Talks with parents and service providers to assess the typical challenges in vaccination administration. They discovered that one key contributing reason was lack of awareness, and that parents were not highly motivated to devote time and effort to having their children immunized, particularly if facilities were far away.

The majority of people in this category had economic status that was below average, and the majority of men we found were employed abroad, same was reported by another study[18]. Hygienic care is important for all, children's are always at risk for getting and spreading disease. According to WHO standards, all of the patients who passed away had severe pneumonia, which included substantial dyspnea, very obvious chest in drawing, and severe hypoxia. In our result 15(10.79%) were seen with dyspnea, 9(6.47%) and cyanosis 4(2.87%) which were seen higher in another studies[19-21].

If the mother is educated, the entire family will likely be as well, according to another study they reported for immunization[22]. Another important factor contributing to the rise in respiratory diseases among slum dwellers is the increased risk of respiratory infections among children and adolescents who live in homes with inadequate ventilation, especially those under the age of five[23]. It will stop the asymptomatic carrier and will help all children. Male gender 82(59%) were seen more in our study then females 57(41%) and it is basic reason that male children's always go outside home while females are culturally inside.

The most prevalent cause of pulmonary inflammation in children with pneumonia is pathogens like viruses and bacteria. Other risk factors for pediatric pneumonia include age, malnutrition, immunosuppression, and immunosuppressive therapy. Clinical symptoms of pediatric pneumonia typically include fever, coughing, shortness of breath, dyspnea, wet rales on lung auscultation, and inflammatory lesions shown on chest imaging evaluation. The primary therapeutic approaches for pediatric pneumonia can be separated into etiological treatment and symptomatic treatment. The preferred approach for etiological treatment is antiviral vitamin therapy[24-27].

The initial focus should be on education, but it is important to remember that lack of facilities has always been a secondary issue. For this reason, the government and international organizations still need to enhance their policies for the distribution of vaccines and up gradation of hospitals with all requirements.

CONCLUSION

For significant advancements, we must put in a lot of effort. To effectively raise awareness of education, children's health and immunization, as well as their necessity and efficacy, we must employ media like radio, television, and newspapers. We must enhance the educational system. By launching health education initiatives in this area, we can raise the health literacy level not just of our mothers but also of the entire nation. The health planners should concentrate on the missed epi schedule.

Limitation: The inability to perform a single trustworthy test makes diagnosing pneumonia challenging. At the individual level, it can be challenging to determine if a positive nose swab indicates nasopharyngeal colonization or aetiology, especially for bacteria like S. pneumonia due to their high asymptomatic carriage rates. By include a control group, it is possible to assess and account for the prevalence of carriage in asymptomatic children at the population level. Since the study was only conducted in one hospital in Kohat, its external validity may be constrained. Our study was just related to presentations at our hospital admissions.

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1. Conception and design of or acquisition of data or analysis and interpretation of data.
2. Drafting the manuscript or revising it critically for important intellectual content.
3. Final approval of the version for publication.

All authors agree to be responsible for all aspects of their research work.

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