



Demographic Profile of Lower Respiratory Tract Infections in Paediatrics

KEYWORDS

Anaemi, Pneumonia, Morbidity, Mortality, Respiratory Infections, Malnutrition.

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ABSTRACT Respiratory tract infection is a major cause of paediatric morbidity and mortality, especially in the developing countries. The aim of the present study was undertaken to study the various risk factors associated with acute lower respiratory tract infections in paediatrics age ranging from 1 month to 10 years of age. 80 cases of respiratory tract infection in the age group of 1 month to 10 years of age were evaluated for various risk factors in rural hospital. Various risk factors like partial immunization, illiteracy, overcrowding, low socioeconomic status, anaemia and malnutrition were associated with respiratory tract infection.

INTRODUCTION

Lower respiratory tract infections represent an important public health burden in the first years of life accounting for approximately one fifth of all deaths in children below five years of age, especially in developing countries[1]. Viral pathogens account for a large proportion of community acquired pneumonia cases. It is estimated to cause 30–70% of the cases of pneumonia[2,3]. The specific role of newly identified viruses on lower respiratory tract infection, like Human Metapneumovirus (hMPV), has been studied in recent years [4]. However, its impact among non-affluent populations has been scarcely evaluated. In such locales, infants with respiratory syncytial virus (RSV)-associated LRTIs present a three times greater risk of a fatal event, when compared to their peers in developed countries [5].

The incidence of pneumonia in developed countries is 3-4 percent, its incidence in developing countries ranges between 20 to 30 percent; this difference could be due to various demographic factors which predispose these children. Respiratory syncytial virus infection in infancy is associated with other long-term respiratory problems (6,7) and, in one study, with pneumonia (8). The magnitude and duration of the increased risk for pneumonia after RSV infection are poorly defined (9).

Human rhinovirus (HRV) seems to be of particular interest, as the most prevalent virus in respiratory illnesses even in the first years of life [10,11], being associated with severe acute bronchiolitis, especially among children of atopic parents [12]. Moreover, a recent study showed that, in a population of preterm infants, HRV was the most prevalent agent associated with severe bronchiolitis [13]. Also of interest is the fact that wheezelated HRV infection in the first year of life is associated with an increased risk for developing asthma later in life [14], and that this effect was greater than the observed in relation to RSV [15]. The present study has been carried out to determine various demographic factors associated with acute respiratory tract infections in [paediatrics](#) age ranging from 1 month to 10 years.

METHODS

Study Population

The study took place in the paediatric wards of Niloufer Hospital, a rural hospital from April 2015 to March 2016.

Data on all paediatrics admissions and discharges of paediatrics linked admission records to the individual residence status of each child at the date of illness with Demographic Surveillance System.

RESULTS

The results of the present study on respiratory tract infection is associated with various risk factors like partial immunization, illiteracy, overcrowding, low socioeconomic status, anaemia and malnutrition are shown in the table 1. From the total 80 cases, majority were found to be males infants than females. Most of parents were educated middle school or high school and very few parents are illiterate and graduate. Among the cases studied, very few belonged to families falling under Low Socioeconomic status (class 4 and 5) and significant association with respiratory tract infection. Socioeconomic status of parents was significantly associated with severity of lower respiratory infections.

Table 1: Association between Social factors, Nutritional factors with acute lower respiratory infections

Demographic profile of paediatrics		Acute Pneumonia	Severe Pneumonia	Total
Age	1-12 months	24	36	60
	1-10 years	8	12	20
Sex	Male	12	33	45
	Female	9	26	35
Parents Education status	Illiterate	6	14	20
	middle school /High school	14	34	48
	Graduate	8	4	12
Over crowding	Present	22	40	62
	Absent	9	19	28
Immunisation	Complete	18	24	42
	Incomplete	04	34	38
anemia	Present	8	29	37
	Absent	14	29	43
Socio Economic status	Class 2 and 3	15	20	35
	Class 4 and 5	8	37	45
Malnutrition	Present	6	26	32
	Absent	18	30	48

DISCUSSION

The World Health Organization estimates that 2 million children die each year from ALRTI, and most live in developing countries[16]. RSV (respiratory syncytial virus) infections were the most frequently encountered infections responsible for hospitalization among infants and were responsible for about 3.4 million hospital admissions of children less than 5 years worldwide[17]. A study from Australia found that the bulk of influenza-like illness in children less than 2 years during the 2009 H1N1 influenza pandemic was actually caused by RSV[18]. Another study on hospitalized infant less than 1 year concluded that the presence of dual viral infections, increased the risk of PICU admission of infant with bronchiolitis[19]. Male children were observed to be the majority among various studies on children under 10 years with acute lower respiratory tract infections. In our study most of acute lower respiratory tract infections cases are infants ,which goes in accordance with previous studies by Gornale et al[20]

The preventive role of immunisation in ALRI prevention has been stressed upon extensively. The present study shows 52% were immunized children, and this is higher than the Savitha et al[6] and Yousif et al[21]. However, the Broor et al[22] study showed a strong correlation with a higher value of partially immunized children (69%). Highly significant association was found between immunisation status and acute lower respiratory tract infections severity. Another risk factor studied was upper respiratory tract infections (URI) in other family members within the past 2 weeks and was present in as much as 30% of the cases. Anaemia was a significant risk factor for acute lower respiratory tract infections in study done by Ramakrishnan et al[23] 74%. But, our study shows 46 % of cases associated with anaemia, which is similar to the Shah et al[24].

CONCLUSION

In our study several risk factors like illiteracy, overcrowding, immunization, low socioeconomic status, were associated with acute lower respiratory tract infections severity. Similarly nutritional risk factors like anaemia and malnutrition were also associated with respiratory tract infections. Interestingly, even in developing countries, the role of recently discovered viruses needs to be further studied in order to identify novel risk factors of susceptibility/severity, and new treatment targets for these agents.

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