Original Research Article

A study of clinical profile and factors associated with acute respiratory infection in paediatric patients at tertiary health care centre

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Abstract

Background: Acute respiratory tract infections (ARIs) are heterogeneous and complex group of diseases caused by a wide range of pathogens in which the possible anatomic site (s) extend from the pharynx to the alveoli. **Aims and Objectives:** To study Clinical profile and factors associated with Acute Respiratory Infection in Paediatric patients at Tertiary health care centre. **Methodology:** This was a cross-sectional study in the patientsless than six years old presented to the department of Pediatric of a tertiary health care center with the complains of ARI during the one year period i.e. January 2015 to January 2016. So during one year period there were 350 patients included into study. The details of the study like age, sex, Socio Economic Status, Breast feeding, Immunization status, residential status, History of parental smoking etc. was asked. The nutritional status was determined by WHO growth charts so all these associated factors correlated with respect percentage with ARI. **Result:** The most common age group in our study was 1-2 Yrs. was 33% followed by 2-3 Yrs. were 22%, 3-4 Yrs. - 18%, <1 Yrs. were 15%, 4-5 Yrs. were 9%, 5-6 Yrs. Were 3%. The majority of the patients were Male i.e. 65%, followed by Female 35%.The most common clinical features were Coughin 90% followed by Fever85%, breathing difficulty in 64%, Runny nose in 61%, Body ache in 59%, Fatigue in 55%. The most common associated factors were Undernutrition in 85%, followed by Incomplete immunization in 74%, Lower SES in 69%, Rural were 59%, Not exclusive BF (Breast Feeding) present in 49%, H/o Parenteral Smoking in 32%. **Conclusion:** It can be concluded from our study that the most common clinical features were breathing difficulty, Runny nose and the most common associated factors were Undernutrition, followed by Incomplete immunization, Lower SES, H/o Parenteral Smoking etc.

Key Words: Acute Respiratory Infection (ARI), Socio Economic Status (SES), Undernutrition, Immunization Status.

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INTRODUCTION

Acute respiratory tract infections (ARIs) are heterogeneous and complex group of diseases caused by a wide range of pathogens in which the possible anatomic site (s) extend from the pharynx to the alveoli.[1] In conjunction with diarrheal diseases and malnutrition, ARIs constitute the major causes of mortality and morbidity among under-five children of the developing world.[1,2] The percentage of deaths due to all causes for ARI is between 2 times and 6 times higher in less developed countries than in developed countries.[3] ARI constitute one-third of the deaths in under-five in developing countries.[3] They contributed 67 million disability adjusted life years in the year 2000.[4] They also account for 30-40% of the attendance to children out patient and 20-30% of hospital admissions.[2,5] It has been shown that they consume significant health sector resources and long-term empiric treatment of ARIs

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contributes to the world-wide antibiotics resistance.[1] The overall reported incidence of ARIs is 6-8 episodes during the first 5 years of life.[6,7] The prevalence of ARIs are determined individually or collectively by a number of factors, which include age, sex, nutritional status, breastfeeding (type and duration), socio-economic status, overcrowding, indoor pollution, passive smoking, etc.[3]

MATERIAL AND METHODS

This was a cross-sectional study in the patients of less than six years old presented to the department of Pediatric of a tertiary health care center with the complains of ARI during the one year period i.e. January 2015 to January 2016. So during one year period there were 350 patients included into study. The details of the study like age, sex, Socio Economic Status, Breast feeding ND, Immunization status, residential status, History of parental smoking etc. was asked. The nutritional status was determined by WHO growth charts so all these associated factors correlated with respect percentage with ARI.

RESULT

Table 1: Distribution of the patients as per the Age

Age	No.	Percentage (%)
<1	53	15
1-2	116	33
2-3	77	22
3-4	63	18
4-5	32	9
5-6	11	3
Total	**350**	**100**

The most common age group in our study was 1-2 Yrs. was 33% followed by 2-3Yrs. were 22%, 3-4 Yrs. - 18%, <1Yrs. were 15%, 4-5Yrs. were 9%, 5-6Yrs. were 3%.

Table 2: Distribution of the patients as per the sex

Sex	No.	Percentage (%)
Male	228	65
Female	123	35
Total	**350**	**100**

The majority of the patients were Male i.e. 65%, followed by Female35%.

Table 3: Distribution of the patients as per the Clinical features

Clinical features	No.	Percentage (%)
Cough	315	90
Fever	298	85
breathing difficulty	224	64
Runny nose	214	61
Body ache	207	59
Fatigue	193	55

The most common clinical features were Coughin 90% followed by Fever85%, breathing difficulty in 64%, Runny nose in 61%, Body ache in 59%, Fatigue in 55%.

Table 4: Distribution of the patients as per the associated factors

Associated factors	No.	Percentage (%)
Undernutrition	298	85
Incomplete immunization	259	74
Lower SES	242	69
Rural	207	59
Not exclusive BF	172	49
H/o Parenteral Smoking	112	32

The most common associated factors were Undernutrition in 85%, followed by Incomplete immunization in 74%, Lower SES in 69%, Rural were 59%, Not exclusive BF (Breast Feeding) present in 49%, H/o Parenteral Smoking in 32%.

DISCUSSION

Acute respiratory infection (ARI) is an acute infection of any part of the respiratory tract and related structures including paranasal sinuses, middle ear and pleural cavity. It included all infections less than 30 days duration except those of the middle ear where the duration of an acute episode is less than 14 days.[8] Globally on an average, children below five years of age suffer five episodes of ARI per child per year, thus accounting for about 238 million attacks. Consequently, ARIs are responsible for about 30-50% of visits to health facilities and about 20-40% of hospital admissions.[9] ARI is one of the major causes of death. In India, Hospital records from high mortality states that up to 13% of inpatients deaths in paediatric wards are due to ARI. According to recent WHO/UNICEF data, about 20% of all deaths in children under 5 years are due to acute lower respiratory infections (pneumonia, bronchiolitis and bronchitis); 90% of these deaths are due to pneumonia. Studies have shown that up to 19% of children hospitalized with pneumonia die in India.[10] In our study we have found that The most common age group in our study was 1-2 Yrs. was 33% followed by 2-3 Yrs. were 22%, 3-4 Yrs. - 18%, <1 Yrs. were 15%, 4-5 Yrs. were 9%, 5-6 Yrs. were 3%, Also the majority of the patients were Male i.e. 65%, followed by Female 35%.The most common clinical features were Coughin 90% followed by Fever85%, breathing difficulty in 64%, Runny nose in 61%, Body ache in 59%, Fatigue in 55%. These findings are similar to study conducted by Kumar V and Tambe MP *et al*, where cough was hallmark of ARI cases (in 100% cases).[11,12] Since most of the cases irrespective of being in the group of URTI or LRTI, begins initially with URTI, so throat/tonsil congestion and coryza were the most common clinical finding. Examination in these patients showed variable inflamed and swollen nasal and

pharyngeal membranes. These findings were comparable with previous study like Reddaiah VP *et al*, in which crepitations were present in 76% patients, rhonchi in 23.2% patients while chest in drawing was present in study by 26.4% patients of ARI.[13] Also we have found that The most common associated factors were Under nutrition in 85%, followed by Incomplete immunization in 74%, Lower SES in 69%, Rural were 59%, Not exclusive BF (Breast Feeding) present in 49%, H/o Parenteral Smoking in 32%. These findings are similar to Jayashree D. Naik *et al*[14] they found Significant risk factors associated with outcome of ARI Cases were Breast feeding and Nutritional status of child

CONCLUSION

It can be concluded from our study that the most common clinical features were breathing difficulty, Runny nose and the most common associated factors were Under nutrition, followed by Incomplete immunization, Lower SES, H/o Parenteral Smoking etc.

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