



Causes And Outcome Of Lower Respiratory Tract Infections (Lrti) In Children Aged 1 Month – 5 Years Attending To Paediatrics Department Of ATertiary Care Hospital

KEYWORDS

risk factors; respiratory infections; LRTI (Lower respiratory tract infection)

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ABSTRACT

Objective: Acute respiratory infections are a leading cause of morbidity and mortality in under-five children in developing countries. Hence, the present study was undertaken to study the various causes of lower respiratory tract infections (LRTI) in children aged 1 month to 5 years. **Methods:** 100 LRTI cases fulfilling WHO criteria for pneumonia, in the age group of 1 month to 5 years were studied and finally the cause of lower respiratory tract infection in ASRAM Medical College. **Results:** Out of 100 LRTI cases, 78 were classified as pneumonia and 22 as severe pneumonia and 3 cases were died and 97 cases were recovered and got discharged uneventfully. **Conclusion:** The present study has identified various socio-demographic, nutritional and environmental risk factors for LRTI which can be tackled by effective health education of the community and effective training of peripheral health personnel.

INTRODUCTION

Acute Lower Respiratory Tract Infection (ALRI) is the leading cause of under-5 childhood morbidity in the world, with nearly 156 million new episodes each year, of which India accounts for a bulk of 43 million. The mortality burden is 1.9 million per year, out of which India accounts for around four hundred thousand deaths per year.[1] In India pneumonia was responsible for about 18% of all under five deaths.[2] In Andhra Pradesh alone 55308 were affected due to pneumonia and 29137 were males and 26171 were females and among them 189 died of pneumonia, of which 107 were males and 82 were females.[3]

AIMS AND OBJECTIVES

To study the clinical profile, the risk factors and immediate outcome at discharge associated with acute lower respiratory tract infections in these children aged 1 month to 5 years surrounding ASRAM hospital, Eluru.

METHOD OF COLLECTION OF DATA

Children in the age group of 1 month to 60 months admitted with LRTI during the study period were enrolled in the study as cases. A case of ALRI is defined as per ARI control programme as "presence of cough with fast breathing of more than 60/min in less than 2 months of age, more than 50/min in 2 months to 12 months of age and more than 40/min in 12 months to 5 years of age, with or without the presence of chest wall indrawing, and the duration of illness being less than 30 days". The presence of refusal of feeds, central cyanosis, lethargy or convulsions was taken as evidence of severe pneumonia. Verbal, informed consent of the child's caretaker's was obtained.

A detailed history of relevant symptoms like fever, cough, rapid breathing, chest indrawing, refusal of feeds, lethargy, wheezing etc. was taken. Past history of similar complaints was also taken.

A detailed systemic examination was done. Routine

hematological investigations were done in all cases to know the degree of anemia and blood counts; chest x-ray was done in all cases to categorise the LRTI into clinical entities and to detect complications, if any. Other specific investigations were done as per requirement in individual cases and all the cases were treated as per the standard protocol depending on the type of LRTI.

ANALYSIS

Appropriate tables and graphical representations were used to display the data. Chi square test was used. A "p" value <0.05 was taken as significant.

RESULTS

Among the 100 cases of LRTI studied, 62% were infants and out of 22 cases of severe pneumonia 63.6% were infants. Among the 100 cases of LRTI, 69% were observed to be males. 31% were females.

PRESENTING COMPLAINTS :

The various presenting complaints among the 100 cases of LRTI were as follows:

Breathlessness	97	(97%)
Cough	93	(93%)
Fever	90	(90%)
Chest indrawing	86	(86%)
Running nose	59	(59%)
Refusal of feeds	27	(27%)
Wheeze	10	(10%)
Lethargy/ Unconsciousness	6	(6%)
Persistent vomiting/Diarrhoea	5	(5%)
Convulsions	3	(3%)

Occurrence of leukocytosis was 28% among the 100 LRTI cases, and significant association ($p=0.000^*$) was found between leukocytosis and LRTI severity.

Among the 100 LRTI cases, only 6% had a positive blood culture. However,

significant association($p= 0.001^*$)was found between LRTI severity and blood culture.

FINAL DIAGNOSIS :

The most common diagnosis was bronchopneumonia (48%), and the other major diagnoses were bronchiolitis and lobar pneumonia 33%and 08% respectively). WALRI accounted for 5%, Croup (acute laryngo tracheo bronchitis) for 4% of cases, empyema thoracis accounted for 2 %.

Final diagnosis	Numbe r
Bronchopneumonia	(48%)
Bronchiolitis	(33%)
Lobar pneumonia	(8%)
WALRI	(5%)
Croup/ALTB	(4%)
Empyema thoracis	(2%)
Total	100 (100%)

OUTCOME :

Among the 100 LRTI cases, 92% required oxygen supplementation at any time during the hospital stay and 9% required mechanical ventilation.3 cases were died, and 97 cases were recovered and got discharged uneventfully.

	Cases	Oxygen supplement ation	Ventilation	Improved	Death
Pneumonia	78(78%)	70	0	78	0
Severe pneumonia	22(22%)	22	9	19	3
Total	100(100 %)	92 (92%)	9 (9%)	97	3

Diagnosis	Numb er	Pneu monia	Severe	O2 requir ed	Mech anical ventil ation	Improv ed	Death
Broncho Pneumonia	48	36	12	45	6	46	2
Bronchiolitis	33	25	8	29	2	33	0
Lobar Pneumonia	8	6	2	8	1	7	1
WALRI	5	5	0	4	0	5	0
ALTB/Croup	4	4	0	4	0	4	0
Empyema Thoracis	2	2	0	2	0	2	0
Total	100	78	22	92	09	97	3

DISCUSSION

In the present study, 100 LRTI cases were studied for the risk factors, clinical and laboratory profile and immediate outcome at discharge.

Lower respiratory tract infections (LRTI) are among the commonest causes of morbidity and mortality among children under 5 years of age, especially in developing countries. In the present study most of LRTI cases are infants (62%) ,which goes in accordance with previous studies by Savitha et al,[3] Yousif et al[4]and Broor et al[5] where infants with LRTI constituted 62.5%, 58.4% and 62.5% respectively. Similarly,Amitoj et.al[6], in a study conducted at MVJ medical college and research hospital,Hoskote,Bengaluru in 2011 observed that majority (61%) were in age group of less than one year.

Of the 100 cases included in the present study, 78% were classified as pneumonia, 22% as severe pneumonia or very severe disease according to the revised WHO classification and treatment of childhood pneumonia at health facilities.5,6The previous studies which were based on previous classification of childhood pneumonia[9,10] like the study by Savitha et al,[3]graded 12.51% as pneumonia, 82.69% as severe pneumonia and 4.8 % as very severe pneumonia, whereas Yousif et al[4] graded 23.4% as no pneumonia, 48.2% as pneumonia, 19.6% as severe pneumonia and 8.8% as very severe pneumonia. Amitoj et.al[6] a study conducted at MVJ medical college and research hospital,Hoskote,Bengaluru in 2011 graded 16% as pneumonia, 60% as severe pneumonia, and 24% as very severe pneumonia.

In the present study, of the 100 LRTI cases, the final diagnoses were bronchopneumonia (48%), and the other major diagnoses were bronchiolitis and lobar pneumonia (33%and 08% respectively). WALRI accounted for 5%, Croup (acute laryngotracheobronchitis) for 4% of cases, empyema thoracis accounted for 2 % cases. Whereas in a study by Amitoj et al[6] Final diagnoses were as follows: 41% were diagnosed as bronchiolitis, 26% as lobar pneumonia,17 % as bronchopneumonia, 10% as WALRI, 5% as acute layngotracheobronchitis (croup) and 1% as empyema thoracis

Outcome

In the present study,of the 100 cases studied, 92% required oxygen supplementation at any time during the hospital stay and among those cases graded as severe pneumonia, 100% cases required oxygen supplementation, which was similar to Amitoj et.al[6] ,a study conducted at MVJ medical college and research hospital,Hoskote,Bengaluru in 2011 in which they observed ,84% of cases required oxygen supplementation and among those cases graded as severe pneumonia 97.6% required oxygen supplementation.

In the present study,mechanical ventilation was required by 9% cases, all were classified as severe pneumonia/very severe disease,similar to Amitoj et al[6] which showed requirement of mechanical ventilation in 8% of cases and all classified as very severe pneumonia

In the present study, there were 3 deaths among the 100 LRTI cases, and the other 97 cases recovered and got discharged uneventfully. In the present study the mortality rate among severe pneumonia was 13.6%, which was similar to Tiewsoh et al[11] which showed a mortality of 10.5% and the study by Nantanda et al[12] which reported a mortality of 15.3%. similar results were found in the study by Banajeh et al[13] which reported a mortality rate of 9.8% in children with severe pneumonia. However, the study by Amitoj et al 82, reported a mortality rate of 1.2% among severe pneumonia.

Conclusion: Breathlessness was the most common presenting complaint among LRTI cases. Leukocytosis and blood culture positivity were observed in a small percentage, but significant association with ALRI severity was observed for both. So

routinely blood culture may not be sent in all cases of pneumonia.

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