

# A PROSPECTIVE SURVEY ON BACTERIAL AND VIRAL AETIOLOGIES OF ACUTE LOWER RESPIRATORY TRACT INFECTIONS IN CHILDREN: A PRELIMINARY STUDY IN A TERTIARY CARE HOSPITAL

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## INTRODUCTION

Acute lower respiratory tract infections (LRTI) remain one of the commonest causes of hospitalisation in children. Identifying the possible pathogenic organisms in these children is important both in management and in implementing preventive strategies such as vaccination.

## OBJECTIVES

To identify the possible aetiology of acute LRTI in a cohort of hospitalised children aged 1 month to 12 years.

## DESIGN, SETTING AND METHOD

A hospital based prospective analytical study was done in a medical ward at a tertiary care children's hospital over a 3 month period. Eighty two children who presented with an acute LRTI were enrolled as a random sample. Demographic data, clinical features and basic investigations were recorded. Nasopharyngeal aspirates were obtained for bacterial cultures and viral antigen detection. Blood was taken for mycoplasma antibodies. Data was analysed using SPSS software.

## RESULTS

Forty three percent of children were less than 2 years. Sixty one percent were male. None were vaccinated with special vaccines (Influenza/ Pneumococcal). Eighty five percent had received antibiotics prior to obtaining samples. Seventy eight percent had a very acute history of cough and fever (< 7 days). Next common symptoms were sputum production (73%) and wheezing (43%). Consistent examination finding was crepitations (100%). Forty two percent underwent chest x-ray (CXR) with positive changes in 23%.

An organism was isolated in 52 patients (66%) of which 21 (40%) were bacterial and 16 (30%) were viral. Two children (3%) had Mycoplasma. Nine (16%) had a mixed aetiology (viral & bacterial). In 6 cases (7%), the identified organisms were possible colonizers of the respiratory tract e.g. coliforms.

Among the bacterial aetiologies, *Streptococcus pneumoniae* was isolated in 12 patients (57%) followed by *Moraxella catarrhalis* in 6 patients (29%). Among viruses, Influenza A and B (80%) were the commonest, followed by respiratory syncytial virus (8%). There was no significant difference in bacterial aetiology in all age groups, but viruses were isolated only in children < 6 years. Mycoplasma was seen only in >6 year age groups. CXR changes were significantly higher in children with a bacterial aetiology (47%), than viral (17%). Similarly, duration of hospital stay was also significantly higher in children with a bacterial (71%) than a viral (28%) organism.

## ***CONCLUSIONS***

- An organism was isolated in 52 (66%) out of 82 children presenting with an acute LRTI.
- Of the isolates 40% were bacterial and 30% viral.
- *Streptococcus pneumoniae* was the commonest bacteria isolated (57%) followed by *Moraxella catarrhalis* (29%). Among viruses, Influenza A and B (80%) were the commonest, followed by RSV(8%).