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ORIGINAL ARTICLE

Interventions in Early Diagnosis and Treatment of Acute Respiratory Tract Infections in Children Under 5 Years of Age

MUHAMMAD AMIR[1], NAHEED AKHATER[2], JAWAD MUMTAZ SODHAR[3], ARSLAN SHUJA[4], MAJIDA MAQSOOD[5]
[1]*Associate Professor Paeds, Isra University Hyderabad Hospital Sindh Pakistan.*
[2]*Assistant Professor Medicine, CMH Institute of Medical Sciences Bahawalpur Pakistan.*
[3]*Associate Professor of Pharmacology, Indus Medical College Taando Muhammad Khan Sindh Pakistan.*
[4,5]*Institute of Molecular Biology & Biotechnology, The University of Lahore. Pakistan.*
Corresponding author: Jawad Mumtaz Sodhar*: dr.jawadsodhar@hotmail.com, Cell: +923353906299*

ABSTRACT

The aims and objectives of this study were early diagnosis and treatment of acute respiratory tract infections in children under 5 years of age by understang the attitued of their mothers. The findings of current study were highly significant (<0.005) and standard mean deviation levels regarding percentage of bronchitis, tonsillitis, otitis media, bronchiolitis, pneumonia in children's of Group A boys, 23.7±3.14, 30.12±13.14, 20.22±23.10, 15.21±11.10, 10.75±10.12 and girls were 24.7±4.14, 31.10±10.11, 20.20±13.10, 14.11±10.5, 10.75±10.12 showed a significant changes as compared to the Group B boys 13.2±3.4, 10.1±10.1, 10.2±3.10, 5.20±1.10, 5.7±1.12 and girls 12.2±3.4, 11.1±10.1, 11.2±3.10, 5.10±1.10, 6.7±1.12 respectively.

INTRODUCTION

In acute respiratory infections normal breathing of a person become disturbed. Acute respiratory infections may be lower or upper respiratory tract [1]. In upper respiratory tract the infections started from sinuses to vocal chords while in case of lower respiratory tract infections started from vocal chords to lungs [4]. Airways from the nostrils to the vocal cords in the larynx, para nasal sinuses and the middle ear are the parts of upper respiratory tract. Trachea, lungs (bronchi, bronchioles and alveoli) are included in lower respiratory tract [2].

The morbidity and mortality in children under five years caused by acute respiratory infections in all over the world and according to WHO 6.5 to 7.2 million children under 5 years of age die each year because of acute respiratory infections in the world [9]. Mostly this problem is found in third world countries. The World Health Organization (WHO) stated 7% burden of respiratory tract infections in the world and 12 million children less than 5 years admitted in hospitals [7].

Upper respiratory tract infections are mostly because of respiratory syncytial viruses and in some case infection lead to bacterial infections of the sinuses and middle ear [6]. Pharyngitis, sinusitis, epiglottitis, and laryngitis etc. are the most common infections of upper respiratory tract. It has seen in different clinical and cross sectional studies by different researchers that upper respiratory tract infections are self- limiting. In young children about 72% acute pharyngitis is caused by viruses [5]. In the cases of acute pharyngitis conjunction in the throat is caused by Corynebacterium diphtheria. In children with acute ear infections some time lead to perforated eardrums and chronic ear discharge in young childhood ultimately caused deafness [3].

The most common indications of lower respiratory tract infections in children are bronchiolitis and pneumonia. The clinical sign for diagnosing in these case is high grade temperature productive cough and rapidly breathing rapidly. It has concluded through different studies that lower respiratory tract infections are highly seasonal and caused by mostly par- influenza viruses [10]. After viral infections leading complications converted in bacterial infections. Pneumonia is a sever complication of lower respiratory tract infections and caused by both bacteria and viruses. Streptococcus pneumoniae or Haemophilus influenza and Staphylococcus aureus are notorious bacteria caused pneumonia in children under 5 years [11]. Other pathogens like Mycoplasma pneumoniae and Chlamydia pneumoniae, cause atypical pneumonias.

Interventions to control acute respiratory infections four basic solid polices are required in first step there should early diagnosis and treatment of disease for this purpose public health awareness is required [12]. Second is immunization against specific pathogens third is improvements in nutrition, and fourth is safer environments. These four steps are so important to control this disease among young children in our health system. Through vaccine intervention strategies and case-management strategies unexpected pathogens and antimicrobial resistance can be controlled among children [13].

MATERIALS AND METHODS

The current study was conducted at Pediatrics wards, out patient's doors (OPD) and in emergencies of different hospitals of Pakistan from November 2021 to December 2021. This is an institutional based study and for this 500 hospitalized under five years children with acute respiratory infections were selected randomly. Dependent and independent both variables were considered for sampling and data collection. The biomarkers for present study were bronchitis, tonsillitis, otitis media, bronchiolitis, pneumonia, age and sex among children with acute respiratory infection, while age, awareness and education of mothers were also noted.

This was a hospital-based cross-sectional analytic study conducted in saturated dry season and 500 hospitalized under five years children with acute respiratory infections were selected and divided into two groups i.e. Group A and Group B. 200 boys and 100 girls with respiratory tract infection were in Group A and 150 boys and 50 girls were in Group B. The education and awareness level of Group B, children's mother were higher and advanced than the Group A, children's mother. All the

parameters were measured and raw data was expressed bio- statistically by applying the model (SPSS).

RESULTS

Table 1: Acute respiratory infections in Group A, boys n= 200

Parameters	Infection positive/negative	Percentage Mean ± SD	P value
Bronchitis	Positive	23.7±3.14	0.000
Tonsillitis	Positive	30.12±13.14	0.000
Otitis media	Positive	20.22±23.10	0.000
Bronchiolitis	Positive	15.21±11.10	0.000
Pneumonia	Positive	10.75±10.12	0.000

<0.005

Table 2: Acute respiratory infections in Group A, girls n= 100

Parameters	Infection positive/negative	Percentage Mean ± SD	P value
Bronchitis	Positive	24.7±4.14	0.000
Tonsillitis	Positive	31.10±10.11	0.000
Otitis media	Positive	20.20±13.10	0.000
Bronchiolitis	Positive	14.11±10.5	0.000
Pneumonia	Positive	10.75±10.12	0.000

<0.005

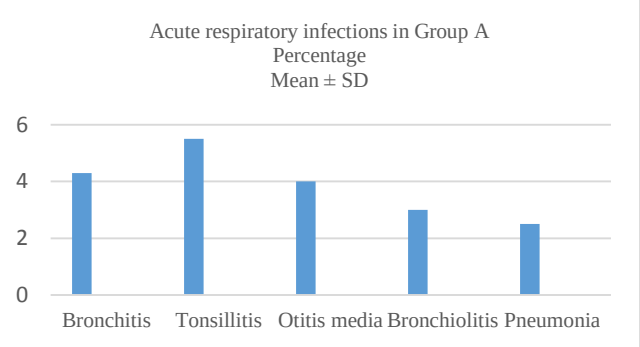

Fig 1:

Table 3: Acute respiratory infections in Group B, boys n= 150

Parameters	Infection positive/negative	Percentage Mean ± SD	P value
Bronchitis	Positive	13.2±3.4	0.000
Tonsillitis	Positive	10.1±10.1	0.000
Otitis media	Positive	10.2±3.10	0.000
Bronchiolitis	Positive	5.20±1.10	0.000
Pneumonia	Positive	5.7±1.12	0.000

<0.005

Table 4: Acute respiratory infections in Group B, girls n= 50

Parameters	Infection positive/negative	Percentage Mean ± SD	P value
Bronchitis	Positive	12.2±3.4	0.000
Tonsillitis	Positive	11.1±10.1	0.000
Otitis media	Positive	11.2±3.10	0.000
Bronchiolitis	Positive	5.10±1.10	0.000
Pneumonia	Positive	6.7±1.12	0.000

<0.005

It has seen in this study that the levels of different parameters of respiratory tract infections among children of Group A, were higher than children of Group B. The percentage standard mean deviation levels of bronchitis, tonsillitis, otitis media, bronchiolitis, pneumonia of children's of Group A boys, 23.7±3.14, 30.12±13.14, 20.22±23.10, 15.21±11.10, 10.75±10.12 and girls were 24.7±4.14, 31.10±10.11, 20.20±13.10, 14.11±10.5, 10.75±10.12 respectively. While the percentage standard mean deviation levels of bronchitis, tonsillitis, otitis media, bronchiolitis and pneumonia of children's of Group B boys 13.2±3.4, 10.1±10.1, 10.2±3.10, 5.20±1.10, 5.7±1.12 and girls were 12.2±3.4, 11.1±10.1, 11.2±3.10, 5.10±1.10, 6.7±1.12 gradually. A significant (<0.005) change in percentage standard mean deviation levels between Group A and Group B were noticed which are presented in graphical presentation.

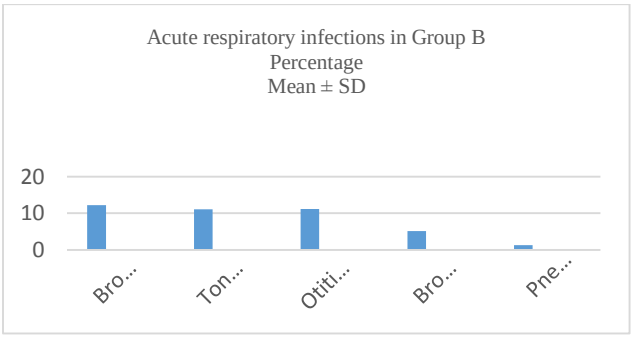

Fig 2:

DISCUSSION

A total of 500 hundred mothers in both rural and urban areas were visited to hospitals with their children in different areas [3,5]. Their level of education, awareness, attitude and services towards children about acute respiratory infections were absolutely different [1,9]. It has observed in different studies by many researchers that maternal age, child age, maternal education, residence, maternal hand washing and maternal health awareness were significantly associated with acute respiratory infections among children under five years [11.2.8].

In a study when 300 mothers admitted in different hospitals with their children in both rural and urban areas [5]. Their knowledge, attitude and handling of children were absolutely different. Only very few mothers were known the sign and symptoms of bronchitis, tonsillitis, otitis media, bronchiolitis, pneumonia [6]. Self-medication was very common in both mothers of rural and urban areas. In both categories the primary health centre in acute respiratory infections was the mother-in-law, she takes management decisions for the child [7].

Present study was highly significant (<0.005) and standard mean deviation levels regarding percentage of bronchitis, tonsillitis, otitis media, bronchiolitis, pneumonia of children's of Group A boys, 23.7±3.14, 30.12±13.14, 20.22±23.10, 15.21±11.10, 10.75±10.12 and girls were 24.7±4.14, 31.10±10.11, 20.20±13.10, 14.11±10.5, 10.75±10.12 showed a significant changes as compared to the Group B boys 13.2±3.4, 10.1±10.1, 10.2±3.10, 5.20±1.10, 5.7±1.12 and girls 12.2±3.4, 11.1±10.1, 11.2±3.10, 5.10±1.10, 6.7±1.12 respectively.

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