DOI: https://doi.org/10.53350/pjmhs22165129

ORIGINAL ARTICLE

Upper and Lower Respiratory Tract Infections: One Year Based Observational Study in Pediatric Population

IMRAN AHMED[1], NAHEED HAROON KAZI[2], SIKANDAR ALI BHAND[3], YASIR ARFAT MEMON[4]
[1]Associate Professor of Pediatrics, Roshan Suleman Medical CollegeTando Adam
[2]Assistant Professor of Pediatrics, Muhammad Medical College, Mirpur Khas
[3]Associate Professor of Pediatrics, Indus Medical College, Tando Muhammad Khan
[4]Senior Registrar of Plastic Surgery, Roshan Suleman Medical College Tando Adam
[5]Assistant Professor of Obstetrics & Gynecology, Bilawal Medical College, Jamshoro
[6]Assistant Professor of Medicine, Indus Medical College, Tando Muhammad Khan
Correspondence to Dr. Imran Ahmed, E-mail: ahmed.imran@live.com Cell: 0333-2693351

ABSTRACT

Background: Pediatric population is the most common among the populations at higher risk for infections and respiratory infections are the most common among the infections due to many reasons.
Aim: To assess the nature of various respiratory infections in pediatric population.
Study Design: Cross sectional study.
Place and duration of study: Department of Pediatrics, Muhammad Medical College Hospital, Mirpur Khas from 1st January 2018 to 31st December 2018.
Methodology: Two thousand and ninety nine children with respiratory illness were included irrespective gender.
Results: The males were more affected 1175 (56%) in comparison to 924 (44%) females and most cases were below the age of 5 years age 1428(68%) whereas children above the age of 5 years were 671 (32%). Common upper respiratory tract infections observed were pharyngitis, tonsillitis and otitis media which were collectively 1576 (75.10%) of the cases followed by lower respiratory tract infections (pneumonia) which was found in 523 (24.90%) patients.
Conclusion: Upper respiratory infections were more common than lower respiratory infection in children and males are more affected than females.
Keywords: Upper respiratory infections, Lower respiratory infections, Pediatric population

INTRODUCTION

Respiratory tract infections of acute nature are among the major morbidity and mortality factor round the globe[1]. Acute infections of the respiratory tract are responsible for 1/3rd deaths in children under the age of 5 years in under developing countries[2]. More than 12 million children of <5 year age are hospitalized due to acute respiratory infection every year[3]. Risk factors for RTIs include malnutrition, underweight children, poorly breast fed children, children under the influence of polluted air, children living in crowded houses and population lack of immunization, parental smoking, deficiency of zinc and vitamin A, concomitant diseases, low or un-educated mothers and cooled climate and winter season etc, Respiratory tract infections may result from viral infection or bacterial invasion causing RTIs of mild, moderate and severe intensity involving upper to lower respiratory tract (pneumonia)[4].

Infection of the respiratory tract are divided into the upper respiratory tract infection (UTRIs) and lower respiratory tract infections (LRTIs), based on the anatomical location of the infection. The URTIs are usually non-severe in nature but these are more common and responsible for the spread of the causative agents in communities while the LRTIs are the pneumonia and bronchiolitis with varying in their etiology, clinical features and diagnostic approach on radiological basis.[5] An estimated 4-5 million child deaths are caused by ARTI in the developing nations every year.[6] Guidelines for managing and treating the children with RTIs are supportive like hydration along with rest while severity of symptoms is well reduced by analgesics and medicine used for cough but the use of antibiotics should be limited for the RTIs suspected for bacterial origin[7].

This study was based on our pediatric outpatient department at the Hospital of Muhammad Medical College in which we tried to draw a snap from the data obtained in whole year pediatric consultancies that may fill the knowledge gap for this region and may help the patient and doctor communities in the long run.

Received on 13-10-2021
Accepted on 15-04-2022

MATERIALS AND METHODS

This cross-sectional research was carried out at the Pediatric Department of Muhammad Medical College, Mirpur Khas district of Sindh province of Pakistan over a time period of one year from 1st January 2018 to 31st December 2018. Informed written consent was obtained from either the parents or the guardians for willingness. All out patients with respiratory illness were included irrespective gender whereas the pediatric emergencies and adolescent were excluded. The data was entered and analyzed through SPSS-25. Research was started after permission from Institutional Ethical Review Board.

RESULTS

Males were in majority 1175(55.9%) as compared to females 924(44.1%) while most affected age group was children bellow the age of 5 years 1428(68%) whereas children above the age of 5 years were 671(32%) [Table1]. Upper respiratory infections were dominated with 1576(75.10%) cases including pharyngitis 774(49.11%), tonsillitis 753(47.78%) and otitis media 49(3.1%) whereas lower respiratory infections cases were 523(24.90%) which presented as pneumonia [Table 2, Fig. 1].

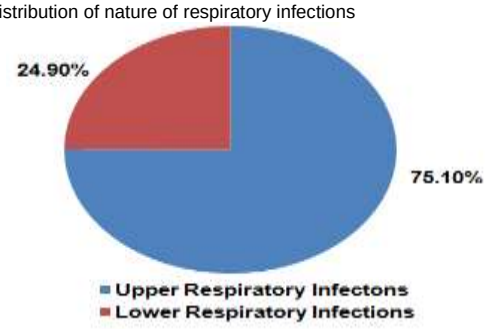
Table 1: Demographic information of the patients (n=2099)

Variable	No.	%age
Age (years)		
<5	1428	68.0
>5	671	32.0
Gender		
Males	1175	55.9
Females	924	44.1

Table 2: Various upper and lower respiratory infections

Nature of RTIs	No.	%age
Upper Respiratory Infections		
Pharyngitis	774	49.11
Tonsillitis	753	47.78
Otitis Media	49	3.1
Lower Respiratory Infections		
Pneumonia	523	24.90

Fig. 1: Distribution of nature of respiratory infections



DISCUSSION

Our results are consistent with study results of Rama et al[8] who reported 109/400 children presenting with respiratory infections with 19.25% as upper RTIs and 8% as lower RTIs. Another study by Tazinya et al[9] reported 42.58% females and 57.62% males in their study. Acute respiratory infection reported were 280(54.7%) which included 112(22.3%) as lower respiratory infections (pneumonia) and upper RTIs were, pharyngitis (43%), tonsillitis(19%) and otitis media (14%) which were also consistent with our study results. An Indian research by Mathew et al[10] reported 19% cases as the lower RTs in their study while we found lower RTIs as 24.90% falling nearly consistent with our findings. Kumar et al[11] reported paediatric respiratory infection as 59.1% whereas we did not include this prevalence in our study that was one of the study limitations. Savitha and Krishnan[12] showed the prevalence of respiratory infections in children below the age of 5 years as 41.6% while we did not estimated this ratio in age groups.

The limitations in the current study were the lack of assessment of risk factors for the development of RTIs in children, lack of aetiology for RTIs e.g. viral and bacterial infections.

CONCLUSION

Upper respiratory infections were more common than lower respiratory infection in children and males are more affected than females.

Conflict of interest: Nil

REFERENCES

1. The UN Inter-agency Group for Child Mortality Estimation. Levels & Trends in Child Mortality: Report 2014. New York: UNICEF; 2014.
2. Ujunwa F, Ezeonu C. Risk factors for acute respiratory tract infections in under-five children in Enugu Southeast Nigeria. Ann Med Health Sci Res 2014;4(1):95-9.
3. Nair H, Simoes EA, Rudan I, Gessner BD, Azziz-Baumgartner E, Zhang JS, et al. Global and regional burden of hospital admissions for severe acute lower respiratory infections in young children in 2010: a systematic analysis. Lancet (London). 2013; 381(9875): 1380-90.
4. Boloursaz MR, Lotfian F, Aghahosseini F, Cheraghvandi A, Khalilzadeh S, Farjah A, et al. Epidemiology of lower respiratory tract infections in children. J Compr Ped.2013;4(2): 93-8.
5. Richter J, Panayiotou C, Tryfonos C, Koptides D, Koliou M, Kalogirou N, et al. Aetiology of acute respiratory tract infections in hospitalised children in Cyprus. PLoS ONE 2016; 11(1): e0147041.
6. Liu WK, Liu Q, Chen DH, Liang HX, Chen XK, et al. Epidemiology of Acute Respiratory Infections in Children in Guangzhou: A Three-Year Study. PLoS ONE 2014; 9(5): e96674.
7. Biezen R, Pollack AJ, Harrison C, Brijnath B, Grando D, Britt HC, et al. Respiratory tract infections among children younger than 5 years: current management in Australian general practice. MJA 2015;202 (5):262-5.
8. Rama VK, Pattankar J, Kura S, Alya I. Acute respiratory infections among under-five age group children at urban slums of Gulbarga City: a longitudinal study. JClinDiagnRes2016;10(5): LC08-13.
9. Tazinya AA, Halle-Ekane GE, Mbuagbaw LT, Abanda M, Atashili J, et al. Risk factors for acute respiratory infections in children under five years attending the Bamenda Regional Hospital in Cameroon. BMC Pulmonary Med2018;18:7.
10. Mathew JL, Patwari AK, Gupta P, Shah D, Gera T, Gogia S, et al. Acute respiratory infection and pneumonia in India: a systematic review of literature for advocacy and action: UNICEF-PHFI series on newborn and child health, India. Indian Pediatr 2011;48(3):191–218.
11. Kumar SG, Majumdar A, Kumar V, Naik BN, Selvaraj K, Balajee K. Prevalence of acute respiratory infection among under-five children in urban and rural areas of Pudu Cherry, India. J Natural Sci Biol Med2015;6(1): 3-6.
12. Savitha AK, Krishnan G. Determinants of acute respiratory infections among under five children in a rural area of Tamil Nadu, India. J Family Med Prim Care 2018;7(6): 1268-73.