

Original Article

Disease Profile of Admitted Children in Patuakhali Medical College Hospital: A Two Years Study

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ABSTRACT

Background: Presentation of disease is key to make clinical decisions. This study is conducted to classify the disease patterns among the hospitalized children in Patuakhali Medical College Hospital.

Methods: This study was carried out in the department of Paediatrics, Patuakhali Medical College Hospital during January 2020 to December 2021. The study was conducted on 500 children between the ages of 0 and 6 who were admitted into hospital using questionnaire to the guardian of the children and analyzing hospital data.

Results: Two-third babies (74.4%) belonged to age 1-2 years. Male female ratio was about 6:4. About half of the babies (51.2%) had cesarean section. Respiratory tract infection was most prevalent (336 cases, 67.2%), followed by gastrointestinal infections like enteric fever (122 cases, 24.4%), diarrhoea (38 cases, 7.6%) and abdominal pain (27 cases, 5.4%). And septicemia (87 cases, 17.4%), allergies (61 cases, 12.2%).

Conclusion: Respiratory tract infections are prevalent followed by gastrointestinal diseases with male preponderance.

Key words: Disease pattern, Respiratory tract infection

INTRODUCTION

Periodic reviews of morbidity and mortality at medical facilities can generate important information because it represents what is happening in a community.¹ Child health is a critical issue in the world. The Patuakhali Medical College Hospital (PkmCH) is a prominent tertiary care hospital in Patuakhali and Barguna districts of south Bangladesh, serving a large population that includes a considerable number of children. Despite progress in healthcare, child mortality rates remain high in Bangladesh, with preventable diseases accounting for a significant portion of deaths.²

Bangladesh has made progress in reducing child mortality in recent years, with the under-five mortality.³ Despite this progress, the rate of child mortality in Bangladesh remains high, with preventable diseases

such as pneumonia, diarrhea accounting for a significant portion of deaths.⁴ Children in Bangladesh face a significant burden of morbidity due to infectious and non-infectious diseases.⁵

Understanding the disease profile of children admitted to the PkmCH is essential for improving the quality of care provided to these patients. This study aims to provide a comprehensive disease profile of children admitted to the PkmCH over a two-year period. The objective is to identify the most prevalent diseases, their clinical presentations, and outcomes. This information can help healthcare providers develop targeted interventions to improve diagnosis, treatment, and management of diseases in children, ultimately contributing to improved health outcomes.

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METHODS

The present descriptive observational study was carried out in the Department of paediatrics, Patuakhali Medical College Hospital during January’ 2020 to December’ 2021. Children between the ages of 0 and 6 years who had been admitted were included in the study. Data was collected using the questionnaire to the guardians of the children and hospital records reviewed and analyzed. Microsoft Excel was used to enter the data that had been collected, and the software Statistical Package for Social Sciences (SPSS) version 23.0 was used to analyze the results. Standard deviation, mean, and other descriptive statistical metrics were used.

RESULTS

Out of the 500 sick children, two-thirds were under 2 years old, while the remainder were between the ages of 3 and 6. Male female ratio was about 3:2 and about half of them had cesarean section (Table 1).

Table 1: Demographic characteristics of the babies (n=500)

	Frequency	Percentage
Age (years)		
1-2	372	74.4
3-4	50	10.0
5-6	78	15.6
Sex		
Male	306	61.2
Female	194	38.8
Mode of delivery		
NVD	244	48.8
Cesarean section	256	51.2

Most of the children were in supplementary foods among them lactogen milk was common (42%) and mean duration of exclusive breast feeding was 3.9±2.5 months (Table 2).

Table 2: Feeding status of the babies (n=500)

	Mean	±SD
Duration of exclusive breast feeding (months)	3.9	±2.5
Range (min-max)	0.1	-18.0
Supplementary food Frequency Percentage		
Lactogen milk	210	42.0
Cow milk	144	28.8
Packet milk	39	7.8

Most (67.2%) of the admitted children has suffered from respiratory tract infections (RTI) followed by gastrointestinal infections like enteric fever 24.4%, diarrhoea 7.6%, abdominal pain 5.4% (Table 3).

Table 3: Disease of the babies (n=500)

Disease	Frequency	Percentage
Respiratory Tract Infection	336	67.2
Enteric fever	122	24.4
Septicemia	87	17.4
Allergy	61	12.2
Diarrhea	38	7.6
Anaemia	28	5.6
Abdominal pain	27	5.4
Febrile convulsion	26	5.2
Meningitis	11	2.2
Nephrotic syndrome	10	2.0
Urinary tract infection	7	1.4
Neonatal jaundice	6	1.2
Miscellaneous	5	1.0
Poisoning	1	0.2
Skin infection	1	0.2

DISCUSSION

In this present study, 306 children (61.2%) were male, and the age group of 1-2 years

accounted for 372 children (74.4%). Rahman et al. reported a male to female admission ratio of 1.5:1 over one year, with 73% of patients being under 5 years old.⁶ In a study of children under 2 years old, Stewart et al. found a male proportion of 50%, while Browne et al. reported 58% male participants.^{7,8} Hasan et al. reported an average male to female ratio of 1.5:1 upon admission.¹

In this study mean duration of exclusive breast feeding was 3.9 months (± 2.5) which is shorter than the standard duration of six months.⁹ This is a cause of high infection in this study as breastfeeding reduces the risk of infectious diseases in childhood and infants.¹⁰

As per the findings of the present study, respiratory tract infections were the most prevalent type of infection, accounting for 336 cases (67.2%). Rahman et al. also reported acute respiratory infection (ARI) as common type of infection (25%).⁶ In a study conducted in Korea, pneumonia was found to be the most prevalent condition requiring hospitalization (17%).⁹ Other studies have also reported pneumonia as a common reason for admission, such as Muluneh et al., who found pneumonia as a reason for admission in 38.6% of total admissions in their study.¹⁰⁻¹² Similarly, in India, Nagaraj et al. found acute bronchiolitis (33%), bronchopneumonia (25.3%), and asthma (16.3%) to be common respiratory illnesses.¹³

Moghaddam et al. reported that respiratory tract and gastrointestinal illnesses had the highest rates of 40.1% and 37.2%, respectively.¹⁴ Among respiratory tract illnesses, bacterial pneumonia was the most common (30.1%). It is worth noting that acute respiratory tract infection (ARI) is the primary cause of morbidity and mortality in both developing and developed countries.¹⁵

In 2010, WHO identified respiratory disorders as the second leading cause of death in children under the age of five, with pneumonia being one of the top three causes of neonatal mortality.¹⁶

Gastrointestinal problems including diarrhoea, abdominal pain, enteric fever were the second commonest causes of hospital admission.

The high frequency of respiratory tract infections among hospitalized children is concerning. Identifying the types of infections that are most prevalent in a region is important to conduct studies that investigate the disease profile among hospitalized children in different settings.

CONCLUSION

Respiratory tract infections are prevalent followed by gastrointestinal diseases with male preponderance.

REFERENCES

1. Hasan MS, Barua SK, Mahmud MN, Kamal AH, Enayetullah M, Karim MR. Disease profile and death pattern among children admitted in a Medical College Hospital. *Bangladesh Journal of Child Health*. 2012;36(2):66-70.
2. Tyagi BB, Haroon AS, Negi VK, Bhardwaj NK. Morbidity patterns amongst hospitalized children in a secondary care hospital of Uttarakhand, India. *Int J Community Med Public Health*. 2016 Apr;3:837-44.
3. Rahman AE, Hossain AT, Siddique AB, Jabeen S, Chisti MJ, Dockrell DH, Nair H, Jamil K, Campbell H, El Arifeen S. Child mortality in Bangladesh—why, when, where and how? A national survey-based analysis. *Journal of global health*. 2021;11.
4. Khan MA, Khan N, Rahman O, Mustagir G, Hossain K, Islam R, Khan HT. Trends and projections of under-5 mortality in Bangladesh including the effects of maternal

high-risk fertility behaviours and use of healthcare services. *PloS one*. 2021 Feb 4;16(2):e0246210.

5. Kamal MM, Hasan MM, Davey R. Determinants of childhood morbidity in Bangladesh: evidence from the demographic and health survey 2011. *BMJ open*. 2015 Oct 1;5(10):e007538.

6. Rahman MM, Islam MM, Islam MA, Bhuiyan AT, Imran AA, Nahar ML. Current Disease pattern and Out-come of patients in a Medical Unit of a Pediatric Hospital. *Northern International Medical College Journal*. 2019;10(2):386-8.

7. Stewart M, Werneke U, MacFaul R, Taylor-Meek J, Smith HE, Smith IJ. Medical and social factors associated with the admission and discharge of acutely ill children. *Archives of Disease in Childhood*. 1998 Sep 1;79(3):219-24.

8. Browne GJ, Penna A. Short stay facilities: the future of efficient paediatric emergency services. *Archives of Disease in Childhood*. 1996 Apr 1;74(4):309-13.

9. Kramer MS, Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane database of systematic reviews*. 2012(8).

10. Victora CG, Barros AJ, Fuchs SC, De Francisco A, Morris J, Hall AJ, Schellenberg JR, Greenwood BM, Kirkwood BR, Arthur P. Effect of breastfeeding on infant and child mortality due to infectious diseases in less developed countries: a pooled analysis. *Lancet*. 2000 Feb 5;355(9202):451-5.

11. Kibirige MS, Edmond K, Kibirige JI, Rahman S. A seven-year experience of medical emergencies in the assessment unit. *Archives of disease in childhood*. 2003 Feb 1;88(2):125-9.

12. Muluneh D, Shimelis D, Benti D. Analysis of admissions to the pediatric emergency ward of Tikur Anbessa Hospital in Addis Ababa, Ethiopia. *Ethiopian Journal of Health Development*. 2007 Sep 13;21(1):48-53.

13. Lee JY, Choi UY, Lee SY, Lee JY, Lee BC, Hwang HS, Mok HR, Jeong DC, Chung SY, Kang JH. An analysis of one-year experience of pediatric observation unit: The first report in Korea. *Clinical and Experimental Pediatrics*. 2007;50(7):622-8.

14. Armon K, Stephenson T, Gabriel V, MacFaul R, Eccleston P, Werneke U, Smith S. Determining the common medical presenting problems to an accident and emergency department. *Archives of disease in childhood*. 2001 May 1;84(5):390-2.

15. Nagaraj N, Subramanian R, Berwal PK, Agrawal R, Solaria S, Saini TC. A study of prevalence and frequency of respiratory illness in hospitalized children in North West part of Rajasthan. *Indian Journal of Immunology and Respiratory Medicine*. 2016 Jan;1:5-8.

16. Moghaddam KB, Hashemian H, Roshan ZA, Asgharzadeh M, Rad AH, Dalili S. Pattern of Infection in Patients Admitted to 17th Shahrivar Children's Hospital. *Archives of Pediatric Infectious Diseases*. 2014 Jul 1;2(3).

17. Rudan I, Boschi-Pinto C, Biloglav Z, Mulholland K, Campbell H. Epidemiology and etiology of childhood pneumonia. *Bulletin of the world health organization*. 2008;86:408-16B.

18. Bryce J, Boschi-Pinto C, Shibuya K, Black RE. WHO estimates of the causes of death in children. *The lancet*. 2005 Mar 26;365(9465):1147-52.