International Journal of Medical Science and Education
pISSN- 2348 4438 | eISSN-2349- 3208
Published by Association for Scientific and Medical Education (ASME)
Int.J.Med.Sci.Educ. July-Sept. 2019; 6(3):66-69
Available Online at www.ijmse.com
Original Research Article

ASSESSMENT OF BURDEN OF URINARY TRACT INFECTION AMONG MALNOURISHED CHILDREN AT TERTIARY CARE CENTRE

Dr Ashwin Dangi[1], Dr Ashwin Sanghavi[2*],

1. Assistant Professor 2. Professor & Head, Department of Paediatrics, Nootan Medical College & Research Centre, Visnagar, Gujarat.

*Corresponding author –**Dr Ashwin Sanghavi**

Email id – drajs.ps17@gmail.com

Received:25/06/2019 ***Revised: 25/08/2019*** ***Accepted:12/09/2019***

ABSTRACT

Background: Urinary tract infection was reported as the major cause of health-related morbidity among the children in various studies. The most common presenting signs and symptoms are unexplained fever, nausea, vomiting and also diarrhea and failure to thrive among infants. However, among older children, these signs and symptoms are coupled with increased frequency of micturition and sometimes presents with nocturnal enuresis. **Material & Methods:** The present prospective study was conducted at department of pediatrics of our tertiary care hospital. The study was an observational study conducted for during a period of nine months. The study done at 95% confidence interval at 10% of maximum allowable error. All children of age 6 months to 5 years, who were diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM), according to WHO criteria were enrolled into the study. **Results:** In present study, out of total study participants, based on the symptoms, the most common clinical presenting symptom was fever present in 29% patients which was followed by symptoms of urinary tract infections present in 7% patients, which was followed by diarrhea present in 6% patients which was followed by vomiting present in 4% patients. **Conclusion:** We concluded from the present study that the most common presenting symptoms were fever, urinary tract infections, diarrhea and vomiting. We found high prevalence of urinary tract infection among children diagnosed with both moderate acute malnutrition and severe acute malnutrition.

Keywords: Urinary tract infection, moderate acute malnutrition, severe acute malnutrition.

INTRODUCTION

Urinary tract infection was reported as the major cause of health-related morbidity among the children in various studies. The most common presenting signs and symptoms are unexplained fever, nausea, vomiting and also diarrhea and failure to thrive among infants **(1)**. However, among older children, these signs and symptoms are coupled with increased frequency of micturition and sometimes presents with nocturnal enuresis as the associated common presenting signs and symptoms. However, some studies reported that children are asymptomatic also in their findings **(2)**. In the context of associated factors, previous studies reported that malnutrition is frequently associated among cases of urinary tract infection and its prevalence is varies from 6% to 37% in their findings. However, these cases of urinary tract infection were asymptomatic and the clinical features of urinary tract infection were masked by clinical features of malnutrition **(3)**.

Previous studies reported that children diagnosed with malnutrition had impaired immunity status; these children were more vulnerable to various infections. Hence, the prevalence of urinary tract infection was reported to be higher among children with malnutrition. In some studies, it was shown that these trends of association of malnutrition and urinary tract infections were seen vice versa **(4)**. They reported in their findings that urinary tract infections further increase the severity of malnutrition and leading to secondary complications like failure to thrive, pyelonephritis and chronic kidney disease. Hence, early diagnosis of urinary tract infections is very essential for starting the treatment which is helpful for child's improvement and preventing further complications **(5)**. We

conduct the present study to assess of burden of urinary tract infection among malnourished children at tertiary care center among children.

MATERIALS & METHODS

The present prospective study was conducted at department of paediatrics of our tertiary care hospital. The study was an observational study conducted during a period of nine months. The study was done at 95% confidence interval at 10% of maximum allowable error. The sample size of 100 patients was calculated by epi info software. All children of age 6 months to 5 years, those were diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM), according to WHO criteria were enrolled into the study. Clearance from hospital ethics committee was taken before start of study. Written informed consent was taken from each study participant and parents.

All the study participants were subjected to general physical and clinical examination and detailed history was recorded from all of them. We exclude the children from the present study who were diagnosed with congenital anomalies in genitourinary tract, children had obstructive uropathy or renal problems, children currently on steroids or had immunodeficiency disorder, HIV infection. All the study participants were subjected to, urine sample analysis irrespective of symptomatic or asymptomatic status. All the information and the methods regarding collection of urine was informed to the parents before the collection of urine sample. In the present study, mid-stream urine was collected and among children who were not toilet trained, finger tap collection method of urine sample was used. All the collected urine samples were subjected to routine test and culture and sensitivity testing. All the recorded data was entered in an Excel spread sheet on Microsoft Excel 2016. The statistical analysis was done using the Statistical software package SPSS v22 and Epi Info v7.2. A p-value <0.05 with 95% confidence intervals were considered statistically significant.

RESULTS

In present study we enrolled a total of 100 children who were diagnosed with children of age 6 months to 5 years, who were diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM), according to WHO criteria and their presenting signs and symptoms were recorded. All the study participants were below 5 years of age. Out of the total majority of study participants were in the age group of 1 - 2 years 35% which was followed by 22% in the 2-3 years age group and 21% in the age group of 6 months to 1 year. 14% study participants were in the age group of 3- 4 years and 8% study participants were in the age group of 4- 5 years. In the present study males 52% were more common than females 42%. (Table 1)

Table 1: Distribution of study subjects according to the age and gender.

parameters		No. of children
Age (years)	6months – 1 year	21%
	1 year – 2 year	35%
	2 year – 3 year	22%
	3 year – 4 year	14%
	4 year – 5 year	8%
Gender	Boys	52%
	Girls	48%

In present study, out of total study participants, based on the malnourishment status, the most common clinical presenting status was moderate acute malnutrition, which was present among 74% patients which was followed by severe acute malnutrition which was present among 26% patients. On the basis of symptomatic status, out of total study participants the most common clinical presenting status was asymptomatic, which was present among 71% patients which was followed by symptomatic stage which was present among 29% patients. (Table 2)

Table 2: symptoms wise distribution of study subjects

parameters		No. of children
Nutritional status	MAM	74%
	SAM	26%
Symptoms	Symptomatic	29%
	Asymptomatic	71%

In present study, out of total study participants, based on the signs and symptoms, the most common presenting symptom was fever present in 29% patients which was followed by symptoms of urinary tract infections present in 7% patients, which was followed by diarrhea present in 6% patients which was followed by vomiting present in 4% patients shown in table 3.

Table 3: symptoms wise distribution of study subjects

Signs and symptoms	Number of Patients
Fever	29%
Urinary symptoms	7%
Diarrhoea	6%
Vomiting	4%

DISCUSSION

In present study we enrolled a total of 100 children who were of age 6 months to 5 years, who were diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM), according to WHO criteria and their presenting signs and symptoms were recorded. All the study participants were below 5 years of age. Out of the total majority of study participants were in the age group of 1 - 2 years 35% which was followed by 22% in the 2-3 years age group and 21% in the age group of 6 months to 1 year. 14% study participants were in the age group of 3- 4 years and 8% study participants were in the age group of 4- 5 years. In the present study males 52% were more common than females 42%. Similar results were obtained in a study conducted by Arvind B et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with acute malnutrition nearly similar results with present study **(6)**. Similar results were obtained in a study conducted by Samuel N et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with severe acute malnutrition nearly similar results with present study **(7)**.

In present study, out of total study participants, based on the malnourishment status, the most common clinical presenting status was moderate acute malnutrition, which was present among 74% patients which was followed by severe acute malnutrition which was present among 26% patients. On the basis of symptomatic status, out of total study participants the most common clinical presenting status was asymptomatic, which was present among 71% patients which was followed by symptomatic stage which was present among 29% patients. Similar results were obtained in a study conducted by Adamu I et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with acute malnutrition nearly similar results with present study **(8)**. Similar results were obtained in a study conducted by Nader S et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with severe acute malnutrition nearly similar results with present study **(9)**.

In present study, out of total study participants, based on the signs and symptoms, the most common presenting symptom was fever present in 29% patients which was followed by symptoms of urinary tract infections present in 7% patients, which was followed by diarrhea present in 6% patients which was followed by vomiting present in 4% patients. Similar results were obtained in a study conducted by Anne-L et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with acute malnutrition nearly similar results with present study **(10)**. Similar results were obtained in a study conducted by F E Berkowitz et al among children diagnosed with both moderate acute malnutrition (MAM) and severe acute malnutrition (SAM). They reported high prevalence of urinary tract infection (UTI) among children diagnosed with severe acute malnutrition nearly similar results with present study **(11)**.

CONCLUSION

We concluded from the present study that the most common presenting symptoms were fever, urinary tract infections, diarrhea and vomiting. We found high prevalence of urinary tract infection among children diagnosed with both moderate acute malnutrition and severe acute malnutrition.

REFERENCES

1. Robinson JL, Finlay JC, Lang ME, Bortolussi R. Prophylactic antibiotics for children with recurrent urinary tract infections. Paediatr Child Heal. 2015 Jan 1;20(1):45–7.
2. Shaw KN, Gorelick M, McGowan KL, Yakscoe NM, Schwartz JS. Prevalence of urinary tract infection in febrile young children in the emergency department. Pediatrics [Internet]. 1998 Aug;102(2):e16. Available from: http://www.ncbi.nlm.nih.gov/pubmed/9685461
3. Robino L, Scavone P, Araujo L, Algorta G, Zunino P, Pírez MC, et al. Intracellular bacteria in the pathogenesis of escherichia coli urinary tract infection in children. Clin Infect Dis. 2014 Dec 1;59(11):e158–64.
4. Caksen H, Arslan S, Cesur Y, Sar S, Celebi V, Kuru M. Urinary tract infection and antibiotic susceptibility in malnourished children. Ceylon Med J [Internet]. 2000 Jun;45(2):77–9. Available from: http://www.ncbi.nlm.nih.gov/pubmed/11051706
5. Lee SJ. Clinical Guideline for Childhood Urinary Tract Infection (Second Revision). Child Kidney Dis. 2015 Oct 30;19(2):56–64.
6. Bagga A, Tripathi P, Jatana V, Hari P, Kapil A, Srivastava RN, et al. Bacteriuria and urinary tract infections in malnourished children. Pediatr Nephrol [Internet]. 2003 Apr;18(4):366–70. Available from: http://www.ncbi.nlm.nih.gov/pubmed/12700964
7. Uwaezuoke SN. The prevalence of urinary tract infection in children with severe acute malnutrition: a narrative review. Pediatr Heal Med Ther [Internet]. 2016;7:121–7. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29388594
8. Rabasa AI, Shattima D. Urinary tract infection in severely malnourished children at the University of Maiduguri Teaching Hospital. J Trop Pediatr [Internet]. 2002;48(6):359–61. Available from: http://www.ncbi.nlm.nih.gov/pubmed/12521279
9. Shaikh N, Morone NE, Bost JE, Farrell MH. Prevalence of urinary tract infection in childhood: a meta-analysis. Pediatr Infect Dis J [Internet]. 2008 Apr;27(4):302–8. Available from: http://www.ncbi.nlm.nih.gov/pubmed/18316994
10. Page A-L, de Rekeneire N, Sayadi S, Aberrane S, Janssens A-C, Rieux C, et al. Infections in children admitted with complicated severe acute malnutrition in Niger. PLoS One [Internet]. 2013;8(7):e68699. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23874731
11. Berkowitz FE. Infections in children with severe protein-energy malnutrition. Pediatr Infect Dis J [Internet]. 1992 Sep;11(9):750–9. Available from: http://www.ncbi.nlm.nih.gov/pubmed/1448316

How to cite this article: Dangi A., Sanghavi A., Assessment of burden of of urinary tract infection among malnourished children at tertiary care centre. Int.J.Med.Sci.Educ 2019;6(3):66-69