

**Prevalence of Urinary Tract Infection in Febrile Children in A Tertiary Care Hospital****Dr. Raman Sharma¹ Dr. Kajal Khajuria² Dr. Audil Mateen³**¹Department of Pediatrics, GMC Srinagar²Department of Transfusion Medicine, GMC Jammu.³Department of Pediatrics, GMC Srinagar**Correspondence Author: Dr. Raman Sharma**, Department of Pediatrics, GMC Srinagar, H no. 86F, Street No 13, Rajpura Mangotrains, Jammu-180001**Conflicts of interest:** None to Declare**Abstract**

Background: Fever is the common symptom of urinary tract infection (UTI) in children less than 5 years of age. The main aim of this study was to determine the prevalence of UTI in febrile infants and children <5 years of age.

Material and Methods: A prospective study was done in the department of pediatrics in GMC Srinagar, which is a tertiary care hospital. In this study urine samples were collected from the children <5 years of age who are admitted in the hospital with fever. Urine was collected from enrolled febrile patients and sent for routine microscopic examination as well as for culture and sensitivity.

Results: Total 150 patients were enrolled in study during 1 year time period from jan 2015 to jan 2016. Out of these 150, 65 were males and 85 were females. UTI was present in 20 patients who had fever without any apparent cause giving a prevalence of 13.3%. Out of these 20 UTI patients, 14 (70%) were females and 6(30%) were males.

Conclusion: UTI is more prevalent among young children, whites, girls, uncircumcised males and those who did not have another potential source for their fever.

Keywords: Febrile illness, Urinary tract infection, Culture.

Introduction

UTI is one of the causes of serious bacterial illness in infants requiring hospital admission and has been associated with significant morbidity (1). Urinary tract infection (UTI), with a reported prevalence between 4.1% and 7.5% (2-5) is the commonest bacterial illness among febrile infants and young children. Unfortunately, the classic signs of UTI and pyelonephritis in older children and adults are not present or easily discerned in the toddler or young child. Fever is the most common symptom of UTI in the infants (6). Also, the presence of another source of fever on examination, such as otitis media or other viral symptoms, does not exclude a UTI (7, 8). Screening of the UTI is uncomfortable for patients, time consuming for staff and expensive in the aggregate. Physicians throughout the united states vary in their clinical practice of when to obtain a urine culture in a febrile infants (9,10).

UTI was first described by Roger in 1839 and since then considerable clinical experience and research have been done on this entity. It has been established by various workers in India and other countries that UTI is one of the commonest infection in children. Infants and young children are of particular concern because UTI in this age group may cause few recognizable signs or symptoms other than fever and has a higher potential for renal

damage than in older children (11, 12, 13). The main aim of this study was to establish the prevalence rate of UTI among young febrile children and to evaluate the effect of age, sex, race and clinical symptom and signs on the prevalence rate of UTI.

Material and Methods

A prospective study was done in department of Pediatrics in GMC Srinagar over a period of one year. Informed consent was obtained from parents and guardians for enrolment of their children in the study. Guardians /children were interviewed using structured questionnaire for UTI.

Inclusion Criteria

1. Febrile children <5 years of age.
2. Children were included in the study if they had a minor potential source of fever such as gastroenteritis, otitis media, upper respiratory infection or non-specific rash.

Exclusion Criteria

1. Children below 6 months and above 5 years.
2. Any child who had received antibiotic prior to the presentation were not included in the study.
3. Children with known congenital genitourinary anomalies.
4. Parents/Guardians not willing to enroll the child in the study.

A sample of urine was collected from all the cases. In children below 2years of age, urine was collected under aseptic precaution by catheterization or suprapubic aspiration. In children above 2years of age, a clean catch of midstream specimen was collected and contamination was minimized by washing the genitalia with soap and water prior to collection. Urine was collected, around 10 ml into sterile bottle and sent for urine analysis, culture and sensitivity.

Results

150 patients were enrolled in the study. Out of these 150, 65(43.3%) were males and 85(56.6%) were females. And from 150 patients, 20 children suffered from UTI i.e 13.3%.

Table1: Sex distribution of patients:

S.No	Sex of patients	Number	Percentage%
1.	Male	6	30
2.	Female	14	70
	Total	20	100

Out of these 6 males, 5 were uncircumcised.

Symptoms:

Non-specific: 1. Fever > 2days (58%)

2. Diarrhea(15%)
3. Poor feeding (45%)
4. vomiting (40%)

Specific symptoms:

1. Malodorous urine (5%)
2. Hematuria (3%)

On examination, supra pubic pain (2 patients), Abdominal pain (10 patients), Flank pain was seen.

Majority (80%) had growth of >100,000 CFU/ml whereas 15% had 50,000 to 99,000CFU/ml and 5% had 10,000 to 50,000CFU/ml.

Microorganisms were found :

E.coli 68%, Actinobacter 16%, Enterococcus 2%, Proteus 2%.

Table 2. Distribution of pus cells in urine:

Pus cells	Male	Female	Total
5-10	1(16.6%)	3(21.42%)	4(20%)
>10	5(83.3%)	11(78.5%)	16(80%)
Total	6(100%)	14(100%)	20(100%)

Discussion

This analysis found that the reported prevalence of UTI varies widely by age, gender and circumcision status. This confirms the importance of demographical and clinical characteristics when considering further diagnostic testing. Female infants with fever had a relatively high rate of UTI, especially during the first year of life. Our results are consistent with data from large epidemiologic UTI studies,(14, 15) which have shown a decreasing incidence of febrile UTI among females during the first 2 years of life.

Among febrile males, circumcision status was important in determining the risk of UTI. Uncircumcised male infant had highest prevalence of UTI. The available data suggest that race is associated with UTI prevalence. Although more data needed to clarify the mechanism by which race affects baseline risk of UTI, based on the available data, white children can be considered at higher risk of developing UTI. The prevalence of UTI was 13.3% in young children. In contrast, among adult females presenting with genitourinary symptoms, approximately 50% are ultimately diagnosed by UTI (16). The discrepancy between children and adults could be secondary to biological differences such as sexual activity and bacterial flora. Alternatively, it could be related to the better availability of adults to recognize and communicate symptoms of UTI. Our study supports the observation of others (2) studies. One of the study had shown that cranberry juice can prevent recurrent UTI (13).

Conclusion

Urine culture is the gold standard test in diagnosing UTI. Urine culture positivity was more in urine analysis showing >10 pus cells/HPF as compared to >5 pus cells/HPF. In diagnosing UTI, pyuria >10 pus cells/HPF was more specific than conventional >5 pus cells/HPF. Many of the patients who had a different provisional

diagnosis turned out to be UTI hence a high index of suspicion is needed to diagnose UTI and prevent complications.

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