Original Article

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Profile of Children Suffering from Urinary Tract Infection: A Cross-Sectional Study

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Abstract

Background : Present study was performed at a tertiary care centre in Gujarat, to discover the profile of the paediatric urinary tract infection (UTI) and to monitor vesicoureteric reflux (VUR) and renal scarring in these subjects. **Subjects and Methods:** Present Hospital based observational prospective study was performed in 150 clinical cases by using Random sampling method, performed at department of pediatrics, Tertiary care institute of Gujarat. Patients from the age of 1 month to 14 years presenting with urinary symptoms (dysuria, urgency, frequency, incontinence, hematuria and suprapubic pain) and those with fever without focus were enrolled in the study. History was noted and children clinically examined. **Results:** Out of total 150 cases, majority of cases were between 1 to 5 years followed by 6-10 year, more than 10 years and less than 1 year. Female were more affected than male children. Out of total 150 cases, majority of patients i.e., 65% were from middle socioeconomic status According to presenting history, maximum patients presented with abdominal symptoms (70%), urinary symptoms (22%), followed by respiratory symptoms in 19% cases, CNS symptoms (7%) and non-specific symptoms in 48% cases. Fever was the most common presenting complaint. **Conclusion:** UTI differs with age and gender and, so, widespread assessment is necessary in boys under one year of age with UTI. Females were extra usually exaggerated than males. Fever being most ordinary presenting symptom follows by vomiting and pain abdomen.

Keywords: Children, Dysuria, Fever, Urinary Tract Infection

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Introduction

UTIs are amid the most frequently come across infections in the pediatric age group together in the community and hospital settings.[1–4] Numerous researches from the United States of America approximate the direct and indirect rate of acute pyelonephritis in adults to 2.14 billion US dollars which is 2.19 billion US dollars in 2013.[5,6]

In children frequent UTI evident as fever of unknown origin. The clinical presentation of UTI in infants and young children can differ from occult and undiagnosed fever to gastrointestinal symptoms as well as upper and lower urinary tract symptoms while, in older children signs referring to the urinary tract may be observed.[7] In the primary year of life, particularly in the first 3 months, UTI is seen added frequently in boys (3.7%) than in girls (2%). Subsequently, the UTI has been accounted to be among three per cent girls and 1.1 per cent boys.[7] Children are at danger of mounting UTI owing to definite anatomic and physiologic issues among which vesicoureteric reflux (VUR) is the most ordinary. VUR leads to frequent infections and additional problems like chronic pyelonephritis and ultimate renal scarring which are workings of reflux nephropathy.[8] Therefore, it is significant to identify this form at the suitable time as it is a avoidable reason of renal damage.

The threat of having a UTI previous to the age of 14 years is just about 1-3% in boys and 3-10% in girls. Obstacle includes renal parenchymal dent and renal scarring that can direct to hypertension and progressive renal deficiency in afterward life. In children, UTI may be the primary arrangement of an fundamental congenital irregularity of the urinary tract. As a result, quick diagnosis, organization of premature management and additional assessment by imaging modalities is significant to protect the function of the rising kidney.[9]

Bacteria are ordinary reason of UTI in children with Escherichia coli being the majority isolated pathogen. The aetiology of paediatric UTI and the antibiotic susceptibility

of urinary pathogens in together the population and hospitals have been altering, and drug confrontation has become a main problem.[10–13]

Escherichia coli, Proteus mirabilis, Enterobacter agglomerans, Citrobacter freundii and Klebsiella pneumonia report for more than 70% of cases of UTI.[14]Present research was performed at a tertiary care centre in Gujarat, with the aim of finding the profile of the paediatric urinary tract infection (UTI), bacterial pathogens concerned, and furthermore to monitor vesicoureteric reflux (VUR) and renal scarring in these patients.

Subjects and Methods

Present Hospital based observational prospective study was performed in 150 clinical cases by using Random sampling method performed at department of pediatrics, Tertiary care institute of Gujarat. Inclusion criteria were: Every child in the age group of 1-month to-14 years admitted in hospital with a possible analysis of urinary tract infection, confirmed by a positive urine culture. Exclusion criteria: Infants below 1 month old were excluded.

Patients from the age of 1 month to 14 years presenting with urinary symptoms and those with fever without focus were enrolled in the study. History was noted and children clinically examined. Complicated UTI (involvement of upper urinary tract) was diagnosed if there was presence of any one or all of the following-fever >390C, persistent vomiting, dehydration, and raised serum creatinine. Recurrent UTI was considered if there was a previous history of one or more episodes of proven UTI

Statistical analysis

The recorded data were analyzed SPSS version 15. Confidence level and level of significance were set at 95% and 5% respectively for all test.

Results

Table 1: Distribution of cases according to age

Age in Years	Number	Percentage (%)
Less than 1	18	12
1-5	63	42
6-10	42	28
>10	27	18
Total	150	100

In present study, out of total 150 cases, majority of cases were between 1 to 5 years followed by 6-10 year, more than 10 years and less than 1 year. [Table 1] Female were more affected than male children. Out of total 150 cases, majority of patients i.e., 65% were from middle socioeconomic status followed by 24% belonged to lower socioeconomic status, 11. % cases belonged to upper socioeconomic status. [Table 2] According to presenting history, maximum patients presented with abdominal symptoms (70%), urinary symptoms (22%), followed by respiratory symptoms in 19% cases, CNS symptoms (7%) and non-specific symptoms in 48% cases. Fever was the most frequent presenting complaint after that vomiting, pain abdomen, oliguria, diarrhea, generalized swelling, burning micturition, cough, decreased appetite, respiratory distress, excessive cry, chills and rigor, abnormal body movement, yellow color of urine, headache while least common present history was chest pain and joint swelling where 1 case each was found.

Table 2: Distribution of cases according to socioeconomic status

Socioeconomic status	Number	Percentage
Lower	36	24
Middle	97	65
Upper	17	11
Total	150	100

Discussion

In consensus statement of Indian pediatric nephrology group, it has been mentioned that through the primary year of life, male was more affected, past 1-2 years; there is female predominance with male. Taneja et al also found maximum number 38.7% cases between 1-5 year, 35.7% of cases were between 5-12 year.[11] They also found male predominance in infancy, which correlate with our study. Findings were consistent with Sharma et al and Krishnan et al.[15,16]

Female are more likely than male to get UTI because the shorter female urethra is a reasonable clarification of the augmented prevalence of UTIs in females. Similar observation described by Zorc et al.[17] Our observations were concordant with an earlier report.[18] On the other hand distinct to present research, Kalantar et al in his forthcoming study of 1696 children aged up to 5 years accounted male to female ratio of 1.07:1.9.

In our study according to presenting history, maximum patients presented with abdominal symptoms (72%), urinary symptoms (23.0%), followed by respiratory symptoms in 18.0% cases, CNS symptoms (8.0%) and non-specific symptoms in 47.0% cases. Fever was the most common presenting complaint after that vomiting, pain abdomen, oliguria, diarrhea, generalized swelling, burning micturition, cough, decreased appetite, respiratory distress, excessive cry, chills

and rigor, abnormal body movement, yellow color of urine, headache while least common present history was chest pain and joint swelling where 1 case each was found. In studies conducted by other authors Sharma et al (65.0%), Krishnan et al shows fever was seen in majority of patients.[15,16]

Conclusion

Present research describes that UTI diverges with age and gender and, consequently, widespread assessment is necessary in boys under one year of age with UTI. Females were more commonly affected than males. Fever being most frequent presenting symptom followed by vomiting and pain abdomen.

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