



PREVALENCE OF URINARY TRACT INFECTION IN CHILDREN (AGE 1 MONTH TO 5 YEARS) WITH FEVER ADMITTED IN JHALAWAR MEDICAL COLLEGE, JHALAWAR

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Abstract

Background: The present study is undertaken to estimate the prevalence of urinary tract infection in febrile preschool children (1 month to 5 years of age) in febrile children visiting at tertiary care centre of Jhalawar, Rajasthan

Methods: It was a cross-sectional, prospective, observational, non interventional study, carried out to analyse the prevalence of urinary tract infection in febrile preschool children (1 month to 5 years of age) in febrile children visiting medical college, Hospital Jhalawar. The study was conducted in Department of Paediatrics, between Dec. 2019 to March 2020. The study was approved by Ethics Committee.

Results: During the study period, we have screened total 1379 preschool children (under 5 years of age) with fever. Out of this total 1379 febrile children, 86 children found to be culture positive cases for UTI (CP-UTI). The prevalence of culture positive cases for UTI in this study was 6.23%. In the prospect of age, 24 (27.91%) children were found to be infant and 62(72.09%) children were found to be of age between 1 years to 5 years.

Conclusion: UTIs in preschool children are often having vague and variable symptoms, often fever is the only symptoms. An untreated UTI can lead to subsequent damage and impairment of renal structure and function, it is very important to diagnose and treat UTI in preschool children.

Keywords: Urinary tract infection, E.coli, Fever.

Introduction

A urinary tract infection (UTI) is an infection from microbes. These are organisms that are too small to be seen without a microscope. Most UTIs are caused by bacteria, but some are caused by fungi and in rare cases by viruses. UTIs are among the most common infections in humans.

A UTI can happen anywhere in the urinary tract. The urinary tract is made up of kidneys, ureters, bladder, and urethra. Most UTIs only involve the urethra and bladder, in the lower tract. However, UTIs can involve the ureters and kidneys, in the upper tract. Although upper tract UTIs are more rare than lower tract UTIs, they're also usually more severe. Urinary tract infections typically occur when bacteria enter the urethra and migrate to the bladder and kidneys. While the immune system can usually neutralize these microbes, there are conditions by which they can take hold and multiply into a full-blown infection.

The most common cause of UTIs is the transfer of bacteria from the rectum or vagina to the urethra. Around 80 percent are caused by E. coli bacteria commonly found in the gut or feces. Those who have had a UTI before usually know when they have had a recurrence. However, evaluation by a doctor is necessary before starting treatment to ensure a definitive diagnosis.¹

In addition to reviewing the symptoms, a physician can use a number of common diagnostic tests or procedures to confirm a UTI:

- A urinalysis can check for blood, pus, glucose, and other abnormalities in the urine.
- A urine culture can be used to identify the bacterial strain in urine.
- USG, Magnetic resonance imaging (MRI) or computed tomography (CT) scans may be used to detect abnormalities in the urinary tract.
- A cystoscope, a long flexible viewing device, can be inserted into the urethra to get an up-close view of the bladder.

Additional test may be performed to see whether there may be other explanations for the symptoms, including a yeast infection, interstitial cystitis, or a sexually transmitted disease like gonorrhea or chlamydia (especially in young men). Urinary tract infections (UTIs) are relatively common in children, particularly young children. Girls are more likely than boys to develop a UTI, except in the first 12 months of life, when boys seem to be more susceptible. The most common organisms that infect the urine are bacteria that normally live in the bowel. Maintenance of proper hygiene and wiping a child's bottom from the front to the back (rather than from back to front) can help

prevent carrying bacteria from the bowel to the urinary tract.²

The present study is undertaken to estimate the prevalence of urinary tract infection in febrile preschool children (1 month to 5 years of age) in febrile children visiting at tertiary care centre of Jhalawar, Rajasthan

Material and Methods

It was a cross-sectional, prospective, observational, non interventional study, carried out to analyse the prevalence of urinary tract infection in febrile preschool children (less than 5 years of age) in febrile children visiting Government Hospital Jhalawar. The study was conducted in Department of Paediatrics, between Dec. 2019 to March 2020. The study was approved by Ethics Committee.

Inclusion criteria - Febrile children less than 5 years attending outpatient department or admitted in Department of Paediatrics medical college Jhalawar.

Exclusion criteria - Children below 1 month and above 5 years; any child who has received antibiotics 48 hours prior to evaluation; children with known congenital genitourinary anomalies; and were excluded from the study

Children with symptoms suggestive of UTI were interviewed using structured case record form (CRF). All symptomatic children were referred for urine routine microscopy and culture tests. From all children, sample of urine was collected. In children less than 2 years of age urine was collected by a bag and in others midstream sample was collected. Urine culture was done using blood agar and Mac Conkey agar by using a 0.001 ml calibrated wire loop and observed for 48 hours. Culture proven UTI cases were started on appropriate sensitive antibiotics. The patients were advised for the follow-up. During follow up, urine culture was done whenever recurrence of UTI was suspected.

Written informed consent was obtained from parents of children before enrolling them into the study. Data were analyzed by Epi-info and SPSS software (20.0 trial version).

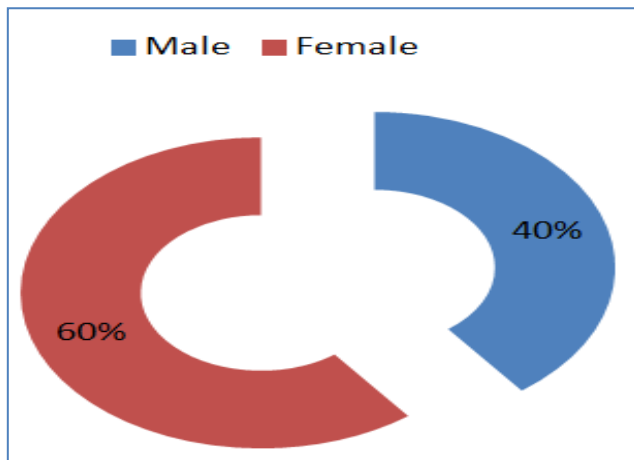
Result

Table 1: Age profile of the patients

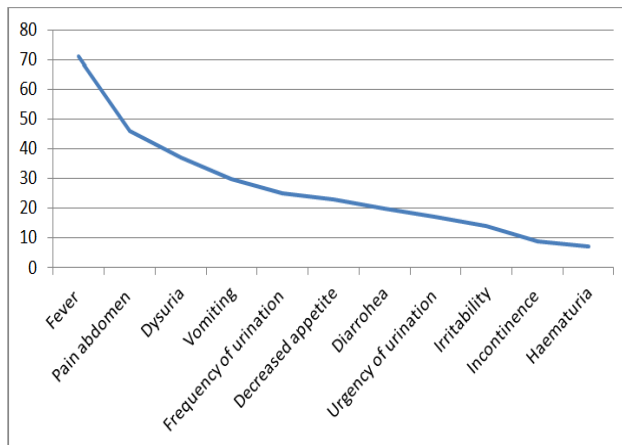
Age	Culture positive	Total
<1 Yrs	24	280
1-5 Yrs	62	1099
Total	86	1379

During the study period, we have screened total 1379 preschool children (under 5 years of age) with fever. Out of this total 1379 febrile children, 86 children found to be culture positive cases for UTI (CP-UTI). The prevalence of culture positive cases for UTI in this study was 6.23%. In

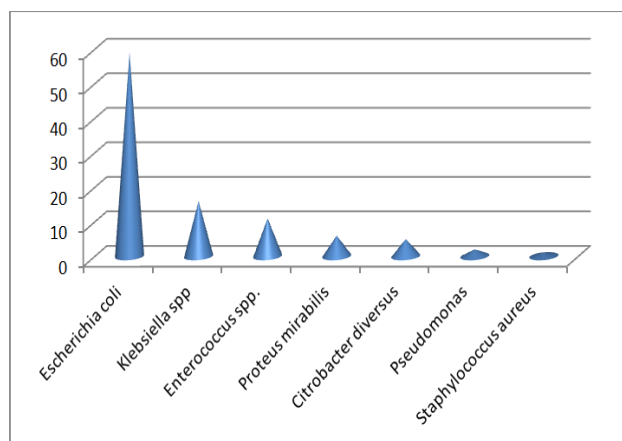
the prospect of age, 24 (27.91%) children were found to be infant and 62(72.09%) children were found to be of age between 1 years to 5 years.



Females were predominantly affected with CP-UTI in comparison of males with M:F ratio of 1:1.53.



71.00% children were presented with fever followed by 46.00% children presented by pain abdomen.



The most common bacteria isolated on urine culture were E.coli followed by Klebsiella spp.

Discussion

UTI is a common infection in children. The females more common than males in all the age groups. Other studies have also shown a female preponderance with a male: female ratio varying from 1:1.3 to 1:2. Males are more susceptible to UTI in the first year of life. Thereafter, females are at increased risk due to a shorter urethra and its proximity to the anus which encourages contamination and ascent of fecal flora into the urinary tract.³

The incidence of UTI in children at the age of 6 years of age is 1%-2% in boys and 3%-7% in girls.⁴ Authors have screened total 660 preschool children (under 5 years of age) with fever. Out of this total 1379 febrile children, 86 children found to be culture positive cases for UTI (CP-UTI). The prevalence of culture positive cases for UTI in this study was 6.23%. In the prospect of age, 24 (27.91%) children were found to be infant and 62(72.09%) children were found to be of age between 1 years to 5 years.

A Nigerian study found out that UTI is common in this group of children with prevalence of 9%.⁵ A cross sectional study done by Shaw and Gorelick in 1999 reported, the prevalence rates of UTI in febrile infants in the emergency department as approximately 3-5% with higher rates for white girls, uncircumcised boys, and those without another potential source of fever.⁶ Fallahzadeh et al, estimated prevalence of urinary tract infections in preschool children and reported a prevalence of 4.4%.⁷ Bauchner et al, in 1987 evaluated the frequency of urinary tract infection in 664 febrile children younger than 5 years of age and reported the prevalence as 1.7%.⁸ According to Hoberman et al, the prevalence of urinary tract infection in febrile infants was 5.3% and the prevalence in infants less than 2 months was

4.6% and in infants with no suspected urinary tract infection, with associated other illnesses the prevalence was 5.1%.⁹ The prevalence of present study is comparable to all these studies conducted all over the world.

Conclusion

UTIs in preschool children are often having vague and variable symptoms, often fever is the only symptoms. An untreated UTI can lead to subsequent damage and impairment of renal structure and function, it is very important to diagnose and treat UTI in preschool children.

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