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The Prevalence of Urinary Tract Infection Among Infantile Colic Patients at Khyber Teaching Hospital Peshawar, Pakistan

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ABSTRACT

Original Research Article

BACKGROUND:

Infants and early children are susceptible to urinary tract infections (UTIs), which affect 8 percent of girls and 2 percent of boys by the age of seven, with a recurrence incidence of 10 percent to 30 percent. Parents have a huge problem when it comes to dealing with infantile colic.

OBJECTIVE: To determine the frequency of urinary tract infections among patients presenting with infantile colic.

MATERIAL AND METHODS: The study comprised 126 male and female infants with colic. Pediatrics Department, Khyber Teaching Hospital, Peshawar. Duration: August 1, August 1, 2019, to January 1, 2020.

Two clean midstream urine samples (two hours apart) were taken from each baby to test for UTIs. UTI was declared positive if the kid had a history of fever >99 f, dysuria, and more than 5 wbcs per HPF or >10⁴ CFU/HPF on urine culture.

RESULTS:

This study included children aged 6 weeks to 6 months, with a mean age of 3.1501.42 months, a mean weight of 4.9790.82 kg, and a mean height of 56.6503.08 cm. The vast majority of the patients were men (69.8 percent). Breastfeeding was practised by 61.1 percent, while bottle feeding was used by 38.9 percent. 8.7 percent of patients had a urinary tract infection.

CONCLUSION:

It is concluded that infantile colic infants should undergo urine evaluation in the first months of life.

KEYWORDS: Infantile colic, urinary tract infection, frequency

INTRODUCTION

Among Newborns And Early Children, Urinary Tract Infections (Uti) Are A Common Cause Of Acute Illness, Accounting For 8 Percent Of Girls And 2 Percent Of Boys By The Time They Reach The Age Of 7, With An Incidence Of 10% To 30% Recurrence. Methods For Collecting And Testing Urine, As Well As The Interpretation Of Results And Treatment Options Outlined By The Canadian Pediatric Society Should Be Thoroughly Examined¹. It Is Difficult To Acquire A Urine Sample From A Sick Child Because Of The Non-Specific Symptoms Of Urinary Tract Infection (Uti) In Young Children. As Many As Half Of Primary Care Children With Uti May Go Unnoticed Because Of Inadequate Sampling Rates.⁴ Up To 80% Of Uti May Go Unnoticed, According To A Study In The United Kingdom. Urine Samples For Culture Should Be Taken From Severely Unwell Children By Primary Care Providers⁵. Septic Shock Or Severe Sepsis (Referred To As "Critical Sepsis") Are Common Complications Of Bacteremia⁶, And 26-33% Of Patients With Bacteremic Uti Presented With

Critical Sepsis⁶. Infantile Colic Is A Serious Concern For Parents. It's One Reason Parents Seek Medical Counsel For Healthy, Flourishing Newborns In The First Three Months Of Life. Inconsolable Weeping May Tear Even The Calmest Parents' Nerves. Though It's Benign And Self-Limiting, Colic Affects Parents, Particularly First-Time Parents. ⁷. Daily Shouting May Force Parents To Lose Their Anger And Control, Creating Shaken Baby Syndrome⁸. Crying Periods Are Linked To Marital Stress, Nursing Failure, And Postpartum Depression. It Affects 5–25% Of Babies Worldwide⁹.

In One Study, 27 Of 150 Infants Had Colic. Among The 27 Infants With Colic, 3 (11.1%) Had Uti¹⁰.

This Study Aims To Investigate The Incidence Of Uti In Infantile Colicky Infants. Considering The Preceding Study, The Worldwide Burden Of Uti Is Rising And Significantly Varies Amongst Populations¹¹. Our Community Has No Study On The Prevalence Of Uti In Newborns With Colic. This Prompted Us To Find Local Evidence Of Uti In Our Infantile Colic Patients, Contribute To The Current Literature, And Provide Future Suggestions For Its Treatment Based On The Findings Of The Present Investigation. The Only Way Of Assessing Pyuria That Corresponds With

The Gold Standard Leukocyte Excretion Rate Is

(Nonprobability) Sampling.

The Presence Of >10 Wbcs/ Mm^3 In An Uncentrifuged Urine Specimen¹². Using A Centrifuged Urine Sample With A Threshold Of 5 Wbcs Per High-Power Field [Hpf] Or About 25 Wbcs/L Is Not Standardized For Centrifugation Parameters Or Pellet And Resuspension Quantities, Resulting In Poor Association With Leukocyte Excretion Rate And Predictive Value¹³. A More Sensitive And More Specific Urinalysis With >10 Wbc/ Mm^3 Or Gramme Stain Detection Of Any Bacteria Per 10 Oil Immersion Fields On Uncentrifuged Urine Was Identified By Hoberman Using The Hemocytometer Wbc Technique To Assess Screening Tests For Children 2 To 24 Months Old. Regular Microscopic Urinalysis And Dipstick Analyses Are Less Sensitive, But This Method Is 83% More Specific (67 Percent)¹⁵.

Etiology

Infantile Colic Has An Unclear Origin But Is Likely Complex. GI, Hormonal, Neurodevelopmental, And Psychological Variables Are Implicated. The Sample Size Was 126 Keeping An 11.1% Proportion Of Utis Among Children With Infantile Colic¹¹ 95% Confidence Level And 6% Margin Of Error Using Who Sample Size Estimation Formula.

Sampling Technique: Consecutive

Sample Selection

Inclusion Criteria:

1. Diagnosed Cases Of Infantile Colic.
2. All The Children Are In The Age Range Of 6 Weeks To 6 Months.
3. Either Gender (Male/Female).

Exclusion Criteria:

1. Infants With A History Of Antibiotic Intake In The Last 48 Hours.
2. Infants With Congenital Abnormalities Of The Urinary Or Gastrointestinal Tract.

If Included, The Conditions Mentioned Above Act As Confounding Factors And Might Introduce Bias In The Study Results.

Collecting Data

The Ethics Committee Approved The Study. The Study Comprised Babies Hospitalized From The Old Department With Infantile Colic (As Per Operational Definitions Above). The Study's Goal, Risks, And Benefits Were Discussed With All Parents, And Their Informed Written

Statistics:

Everything Was Done In SPSS 23.0. Continuous Variables Like Age, Weight, And Height Have Mean + Standard Deviations. Gender, Feeding Method (Bottle Or Breast), And Uti Frequencies And Percentages Were Determined. UTI Was Stratified By Age, Gender, Weight, Height, And Feeding Style To Evaluate Impact Modifiers Using A Chi-Square Test With P 0.05. Tables And Charts Showed All The Outcomes.

RESULTS

This study included 6 weeks to 6 months, with a mean age of 3.1501.42 months, mean weight of 4.9790.82 kg, and a mean height of 56.6503.08cm (table-i).

Table-ii shows that 69.8% of patients were male. As stated in table-iii, 61.1 percent were breastfed, and 38.9% were bottle-fed.

Table iv shows that 8.7% of patients had UTIs. Tables v-ix illustrate urinary tract infection stratification by age, gender, weight, height, and feeding method.

Table-01 : MEAN ± SD OF AGE, WEIGHT, AND HEIGHT =126

	<i>Demographics</i>	<i>Mean ± sd</i>
1	<i>Age (months)</i>	3.150±1.42
2	<i>Weight (kg)</i>	4.979±0.82
3	<i>Height (cm)</i>	56.650±3.08

Table- 02: FREQUENCY AND PERCENTAGE OF PATIENTS ACCORDING TO GENDER N=126

<i>Gender</i>	<i>Frequency</i>	<i>%age</i>
<i>Male</i>	88	69.8%
<i>Female</i>	38	30.2%
<i>Total</i>	126	100%

Table- 03: FREQUENCY AND PERCENTAGE OF PATIENTS ACCORDING TO THE TYPE OF FEEDING

<i>Type of feeding</i>	<i>Frequency</i>	<i>%age</i>
<i>Breast</i>	77	61.1%
<i>Bottle</i>	49	38.9%
<i>Total</i>	126	100%

Table- 04: FREQUENCY AND PERCENTAGE OF PATIENTS ACCORDING TO URINARY TRACT INFECTION

<i>Urinary tract infection</i>	<i>Frequency</i>	<i>%age</i>
<i>Yes</i>	11	8.7%
<i>No</i>	115	91.3%
<i>Total</i>	126	100%

Table- 05: STRATIFICATION OF URINARY TRACT INFECTION CONCERNING AGE

<i>Age</i>	<i>Urinary tract infection</i>		<i>P-value</i>
	<i>Yes</i>	<i>No</i>	
<i>6 weeks to 3 months</i>	7(9.3%)	68(90.7%)	0.771
<i>4-6 months</i>	4(7.8%)	47(92.2%)	
<i>Total</i>	11(8.7%)	115(91.3%)	

Table- 06: STRATIFICATION OF URINARY TRACT INFECTION CONCERNING GENDER

<i>Gender</i>	<i>Urinary tract infection</i>		<i>P-value</i>
	Yes	No	
<i>Male</i>	9(10.2%)	79(89.8%)	0.365
<i>Female</i>	2(5.3%)	36(94.7%)	
<i>Total</i>	11(8.7%)	115(91.3%)	

Table- 07: STRATIFICATION OF URINARY TRACT INFECTION CONCERNING WEIGHT

<i>Weight (kg)</i>	<i>Urinary tract infection</i>		<i>P-value</i>
	Yes	No	
≤ 5	6(10%)	54(90%)	0.630
> 5	5(7.6%)	61(92.4%)	
<i>Total</i>	11(8.7%)	115(91.3%)	

Table- 08: STRATIFICATION OF URINARY TRACT INFECTION CONCERNING HEIGHT

<i>Height (cm)</i>	<i>Urinary tract infection</i>		<i>P-value</i>
	Yes	No	
≤ 60	8(7%)	106(93%)	0.036
> 60	3(25%)	9(75%)	
<i>Total</i>	11(8.7%)	115(91.3%)	

Table- 10: STRATIFICATION OF URINARY TRACT INFECTION CONCERNING THE TYPE OF FEEDING

<i>Type of feeding</i>	<i>Urinary tract infection</i>		<i>P-value</i>
	Yes	No	
<i>Breast</i>	3(3.9%)	74(96.1%)	0.016
<i>Bottle</i>	8(16.3%)	41(83.7%)	
<i>Total</i>	11(8.7%)	115(91.3%)	

DISCUSSION

The 126 children who came to the old department crying were part of the study. Baby's cries, fussiness, screaming, or irritation are the most common reasons for bringing them into the opd department; 13 percent of children have a further opd department visit within one week of their initial discharge. 8.7 percent of children had a UTI in our study, highlighting the need for a thorough assessment. Afebrile weeping kidsshould not be routinely investigated since only 1% of children were diagnosed only based on investigations. As a result, a clinically guided workup is the best approach¹⁴. In afebrile childrenwith urinary tract infections, crying has been described as the most common complication. 47 A recent Iranian study of 200 afebrile crying newborns found that our study's total urine culture

yield was comparable to that of the Iranian study. The biggest number of youngsters ages 1-6 months produced the most¹⁵. Although asymptomatic bacteriuria has been recorded in up to 1% of infants under 60 days of age, it is doubtful that all of the positive cultures in our study are due to this. Syria is not a sensitive sign in neonates, and only half of the febrile children under 8 weeks of age with positive urine cultures have an abnormal urinalysis. Therefore, doctors should not discount the culture result even inthose with normal urine analysis¹⁶. The positive urine cultures in our study of patients are crucial and should not be dismissed since it is conceivable for them to be false-positive, even on catheter specimens. We observed that a comprehensive history and physical examination

of the crying newborn were the most critical aspects of the assessment^{17,18,19}. A patient's history and physical examination results guided certain procedures, such as a nasopharyngeal aspirate or liver function test or abdominal ultrasound, or a skull scan, in the diagnosis of around 10% of patients. Overall, they were seldom employed as screening tests in our study. Hence their diagnostic value is diminished²⁰. Corneal fluorescein staining has been recommended for newborns who exhibit sudden, unexplained irritability or excessive crying, even though these symptoms are not frequently associated with corneal abrasions. Based on a case study of 20 children under one year of age exhibiting weeping or irritation and were diagnosed with corneal abrasions, this advice is based on the findings. 52 Whether these results have any clinical significance is uncertain since no ophthalmologist has confirmed them, and fluorescein-impregnated sheets were used, which may cause corneal abrasion²¹. Even though corneal abrasions were found in 5% of crying

Crying may have a variety of causes, from benign to life-threatening. The cornerstone of the assessment of crying newborns is a comprehensive history and physical examination, which should guide the inquiry choices. In the first few months newborns in a prior study²², no prevalence statistics were given in this case series. Patching and antimicrobial medication have

been contested even after being diagnosed. Cochrane's review of 11 relevant studies in 2006 found that patching did not promote healing or decrease discomfort. The prevalence of corneal abrasions in our study was 0% [95 percent confidence interval: 0% – 1.9%]. However, we cannot infer that doctors should stop screening for abrasions because of this low incidence²³. There is a good chance that no kid had a substantial corneal abrasion, as indicated by our follow-up. Still, minor corneal abrasions may have been missed since only one child had a fluorescein examination. Because of this, it is feasible that no fluorescein examination was conducted on a kid with an abrasion; it is also possible that an examination was performed on many more children, but no documentation was provided. Stool occult blood testing and a rectal examination are also of uncertain utility²⁴.

CONCLUSION

of life, afebrile newborns should have their urine tested. Based on the history and physical examination results, further investigations such as rectal examination and fluorescein staining should be conducted.

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