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ISOLATION AND DIAGNOSIS OF BACTERIA CAUSING URINARY TRACT INFECTION IN CHILDREN

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ABSTRACT
This study included isolating and diagnosing isolated bacteria from children with urinary tract infection. This study included a number of aspects taken into account age. The samples were divided into two children under two years of age and children over the age of two years. Another variable is gender. The samples were divided into males and females. Another variable study, which is the four blood groups, also studied the relationship of this disease to diabetes and finally tested the sensitivity of bacteria to antibiotics.

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INTRODUCTION

Urinary tract infection (UTI) in kids is a genuinely basic condition. Microorganisms that enter the urethra are generally flushed out through pee. [1] Be that as it may, when microscopic organisms aren't ousted out of the urethra, they may develop inside the urinary tract. [2] UTIs happen all the more regularly in young ladies, particularly when can preparing starts. [3] Young ladies are progressively defenseless in light of the fact that their urethras are shorter and closer to the rear-end. [4] This makes it simpler for microscopic organisms to enter the urethra. Uncircumcised young men under 1-year-old likewise have a marginally higher danger of UTIs. The underlying indications of a UTI in youngsters can be not entirely obvious. [5] More youthful youngsters may have a troublesome time depicting the wellspring of their misery. [6] On the off chance that your tyke looks wiped out and has a high fever without a runny nose, ear infection, or different clear purposes behind ailment, counsel their primary care physician to decide whether your tyke has a UTI. Brief analysis and treatment of a UTI in your youngster can avert genuine, long haul medicinal difficulties. Untreated, a UTI can bring about a kidney disease that may prompt increasingly genuine conditions, for example, kidney sore. [7]

MATERIALS & METHODS

Tests: seventy examples were gotten from Ramadi teaching Hospital for Gynecology and childhood. Gathered from suspected patients experiencing urinary tract contamination in an alternate age.

Accumulation and Culture Samples: All examples were gathered in disinfected prescribed compartments. The pee examples were controlled by rotator machine at 1500 rpm for 5 minutes. The disposed of the supernatant at that point refined the hasten by streaking on MacConkey agar, blood agar at that point brooded at 37°C for 24-48 hour [8]

Research facility conclusion: it was incorporated infinitesimal assessment of the developing bacterial cells was completed by moving an unadulterated single state to a glass slide and method gram recoloring. [9] The chose settlements experience biochemical tests to analyze the species level and as pursues.

Catalase test: utilization of this test to separate among staphylococci and streptococci microscopic organisms. Move a solitary settlement by age (18-24) hour to slide and include few drops of 3% hydrogen peroxide. Quick air pocket arrangement demonstrating a positive test. [10]

Oxidase test: get a few states from the development media by the clean wooden sticks circle into the dampened channel paper by 1% oxidase reagent. The adjustment in the shade of the zone to purple shading following (30) second showing for a positive outcome. [11]

Coagulase test (slide technique): was a quick analysis **utilized as the accompanying:** include two drops of clean saline on every territory of the partitioned slide. At that point move the bacterial states to make a suspension. What's more, was treated with undiluted plasma. Watched the outcome by clustering inside 10-20 second of the bacterial suspension was a positive outcome. [12]

Indole test: the peptone water vaccinated by single settlement structure confined microbes, hatched for 24-48 hours at 37C° included after that 0.5ml of Kovacs reagent. What's more, recorded the outcome [13]

Citrate usage test: (Simmon's citrate agar) bacterial immunized in agar and hatched for 24-48hours at 37C° the sodium carbonate produced changed the marker shading (bromothymol blue) from green to blue shading. [14]

Vitek 2 framework for distinguishing proof of microorganisms: The bacterial confines from pee were recognized by Vitek 2 minimized framework. The chose cards were utilized relied on the consequence of the gram stain and conditions development of the microorganism to be tried [15]

Antibiotic Susceptibility test: to decided antimicrobial specialist we utilized Muller – Hinton (MH) agar by Kirby-Bauer Disk dispersion system. Moved the bacterial development and spread by sterile glass spreader L - shape. The anti-infection agents plate was put. The plates were brooded for 24 hours at 37 °C. What's more, the decided outcome by estimating the millimeter zone inhibition .[17]

RESULT AND DISCUSSION

Table 1. Percentage of growth of bacteria causing urinary tract infection depending on age

Sample	Number Patient	Positive growth		Negative growth	
		N	%	N	%
Total number	70	30	42.8	40	57.1
≤ 2 year	25	14	56	11	44
>2 year	45	20	44	25	55

Table 1 shows the percentage of bacteria causing urinary tract infection in children depending on age. The total number of specimens was 70. A sample of 30 samples showed growth and 42.2% and 40 samples did not induce growth of 57.1%. The number of samples for children under two years was 25 samples, while children older than two years were 54 samples. The highest incidence was recorded in children under two years with a percentage of 56%. This study is consistent with [17]

Table 2. Percentage of growth of bacteria causing urinary tract infection depending on gender

Sample	Number Patient	Positive growth		Negative growth	
		N	%	N	%
Total number	70	30	42.8	40	57.1
male	15	10	66	5	33
Female	55	35	63	20	36

Table 2 shows the percentage of bacteria causing urinary tract infection in children depending on gender The total number of specimens was 70. A sample of 30 samples showed growth and 42.2% and 40 samples did not induce growth of 57.1%. The results showed that the number of infected women is more than the number of infected males, where the number of males infected with urinary tract infection 15 children, where the number of samples that gave positive growth 10 percentage 66% and negative 5, 33%, while the number of children infected with female reached 55, The number of samples that gave positive growth was 63% and the samples did not give 20% growth by 36%. This study is consistent with [18]

Table 3. Percentage of growth of bacteria causing urinary tract infection depending on diabetic

Sample	Number Patient	Positive growth		Negative growth	
		N	%	N	%
Total number	70	30	42.8	40	57.1
diabetic	45	25	55	20	44
Non diabetic	25	10	40	15	60

Table 3 shows the percentage of bacteria causing urinary tract infection in children depending on diabetes. The total number of specimens was 70. A sample of 30 samples showed growth and 42.2% and 40 samples did not induce growth of 57.1%. The results showed that the number of children with urinary tract infection who had diabetes was more than those without diabetes. Where the number of children infected with urinary tract infection and diabetic 45 children, where the number of samples that gave positive growth 25 samples by 55%, while samples did not give growth of 20 samples by 44%. As for the children who did not have diabetes, the number of samples was 25 samples, 10 of which gave growth of 40% and 15 samples did not give growth of 60%. This study is consistent with [19]

Table 4. Percentage of growth of bacteria causing urinary tract infection depending on blood group

Sample	Number Patient	Positive growth		Negative growth	
		N	%	N	%

Total number	70	30	42.8	40	57.1
A	10	8	80	2	20
B	20	12	60	8	40
AB	5	1	20	4	80
O	35	20	57	15	42

Table 4 shows the percentage of bacteria causing urinary tract infection in children depending on blood groups . The total number of specimens was 70. A sample of 30 samples showed growth and 42.2% and 40 samples did not induce growth of 57.1%. The results showed that the number of children infected with urinary tract infection of type O blood is more than the rest of the other species, where the number of samples that gave the growth of 20 samples by 57%, while samples did not give the growth of 15 samples by 42%, while type B was The number of infected 20 infected urinary tract infection, where the number of samples that gave the growth of 12 samples by 60%, while did not give 8 samples by 40%, the lowest class AB type gave 5 samples. This study is consistent with [20]

Table 5. percentage of bacteria isolated from UTI patients.

Kind of bacteria	percent of bacteria isolates (from 70 patients)		
	Number	Gram Stain	%
Pseudomonas aeroginosa	20	-	66
Klebsiella pneumonia	10	-	44
Negative culture number	40		
Total	70		

Table 5 shows the percentage of bacteria isolated from urinary tract infection and its types. The highest growth rate of Pseudomonas aeroginosa 20 isolates was isolated from 30 isolates by 66%, while Klebsiella pneumonia gave 10 samples of 30 samples with 44% Give 40 sample growth consistent with this study[21]

Table 6. Antibiotic sensitivity test

Bacteria	Antimicrobial sensitivity									
	AK	IPM	VA	CRO	CTX	NOR	NA	CIP	NI	GM
Pseudomonas aeroginosa	+	-	-	R	R	+	+	+	R	+
Klebsiella pneumonia	+	R	R	-	R	-	-	-	-	+

AK \Amikacin, IPM \ Impienem VA \Vancomycin , CRO \Ceftriaxone, CTX\Cefotaxime, NOR \Norfloxacin, NA \Nalidxic acid, CIP\Ciprofloxacin , NI\Nitrofurantion, GM \Gentamycin

Table 6 shows the sensitivity of isolated bacteria from UTI patients. The results showed that Pseudomonas aeroginosa was sensitive to Ciprofloxacin, Nalidxic acid, Norfloxacin, Amikacin and Cefotaxime. Klebsiella pneumonia was sensitive to Amikacin, Gentamycin and antibiotic resistance Cefotaxime,. The bacteria's sensitivity to antibiotic varies according to the type of bacteria and the structure of the external membrane and its effectiveness also vary according to the ownership of the systems of DNA repair. This study agrees with[21]

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