Bacterial Agents of Urinary Tract Infection in Children and Their Antibiotic Sensitivity Patterns

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المرحلة الثالثة
Introduction:

- Urinary tract infection (UTI) is a common problem in children.

- **Three to five** percent of febrile children are found to have UTI. With **minimal** and **non-specific** symptoms in infants and small children, but it may lead to life-threatening complications like **sepsis** and **renal scarring**; therefore, diagnosis should be as early as possible.

- Urinary Tract Infection can be caused by different pathogens, E.coli, proteus, klebseilla, staph. Spp., strept spp., enterobacter and others.
Aims of the study

- To find out the causative agents of urinary tract infection in children.
- To detect their antibiotic sensitivity patterns.
Material and method:

- A total of 95 urine samples were collected from children suspected of having UTI in Al-Salam Teaching Hospital in Mosul city during the study period from October 2012 to February 2013. Out of which a total number of 43 showed significant bacterial growth. The midstream urine specimens were obtained by clean-catch method.

- The samples were collected in sterile containers and cultured within one hour of collection.
- The samples were placed on MacConky and blood agar media and incubated aerobically overnight at 37°C.

- The characteristic bacteria on the culture media were subjected to microscopical examination and biochemical tests for proper identification.

- Antimicrobial sensitivity were carried out by disc diffusion technique using Muller Hinton agar based on a selected antibiotics of different classes used for susceptibility testing.
The used antibiotics were:

- ampicillin (10 µg), nitrofurantoin (30 µg), amickacin (30 µg),
- gentamicin (10 µg), nalidixic acid (30 µg), ofloxacin (5 µg),
- ciprofloxacin (5 µg), ceftriaxone (30 µg), cefotaxime (30 µg),
- cephalexin (30 µg), norfloxacin (10 µg),
- chloramphenicol (30 µg), tobramycin (10 µg),
- kanamycin (30 µg), cloxacillin (5 µg).
Results and Discussion

The incidence varies according to age, race and sex of children. A higher incidence of UTI was observed in females (84%) compared to males (16%) as shown in Figure (1).
The present study showed higher positive rate of infection of 44% in the age group of (3.5-7 yrs) in comparison with other age groups. This may be attributed to the fact that this age group are not well trained to toilet use which increase likelihood of ascending infection with fecal flora in this age group.
Fig. 3: Types of bacteria causing UTI

- E.coli: 46%
- kleb: 20%
- entero: 17%
- strept: 3%
- staph.aureus: 6%
- staph.epider: 8%
<table>
<thead>
<tr>
<th>Antibiotics</th>
<th>Enterobacter</th>
<th>E. coli</th>
<th>Klebsiella</th>
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<tr>
<td></td>
<td>R%</td>
<td>S%</td>
<td>R%</td>
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<tr>
<td>AMPICILLIN</td>
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<td>AMIKACIN</td>
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<tr>
<td>CEPHALOTHIN</td>
<td>67.7</td>
<td>33.3</td>
<td>88.9</td>
</tr>
</tbody>
</table>
Conclusions:

1) Higher incidence of UTI in females than males.

2) High incidence of UTI is detected in the age group of (3.5-7) years.

3) *E. coli* is the predominant uropathogen.

4) Meropenem and Nitrofurantoin are the most effective drugs, while ampicillin revealed the highest resistance rate.
نتوجه بالشكر الجزيل إلى كليتنا العزيزة ومستشفى السلام على اتاحة مثل هذه الفرصة لنا ولغيرنا..

نتقدم بالشكر والتقدير لمشرفتنا الدكتورة ندى الحسو ..

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THANK U 4 LISTENING