Urinary tract infection in children and its homoeopathic management

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Abstract: Urinary Tract Infection is a common medical problem in found in children showing significant as well as insignificant clinical features which should be evaluated properly to reach to the diagnosis. It can be managed conservatively and is preventable. Homoeopathic medicines have a significant role in these cases.

Keywords: Urinary tract infection, paediatric, homoeopathy

Abbreviation: UTI: Urinary Tract Infection, USG: Ultrasonography, CT: Computerised Tomography; E. Coli: Escherichia coli

Introduction:
UTI is a common medical problem encountered in paediatric age group.[1,2] During the first yr of life, the male:female ratio is 2.8 : 5.4. Beyond 1-2 yr, there is a female pr

eponderance, with a male:female ratio of 1:10. [2]

Aetiology: [1,2]

Causative factor:

- UTIs are caused primarily by colonic bacteria.
- *Escherichia coli* causes 54–67% of all UTIs, followed by *Klebsiella* spp. and *Proteus* spp., *Enterococcus,* and *Pseudomonas*.
- Other bacteria known to cause UTIs include *Staphylococcus saprophyticus,* group B streptococcus, and, less commonly, *Staphylococcus aureus, Candida* spp., and *Salmonella* spp.

Risk factors:

- Female gender
- Uncircumcised male

- Obstructive uropathy
- Urethral instrumentation
- Sources of external irritation (such as tight clothing, pinworm infestation)
- Constipation
- Anatomic abnormality (labial adhesion)
- Sexual abuse

Clinical features: [1]

- They depend upon the age and the severity of UTI.
- Neonates show features of sepsis with fever, vomiting, diarrhea, jaundice, poor weight gain and lethargy.
- The older infant has unexplained fever, frequent micturition and occasionally convulsions.
- The presence of crying or straining during voiding, dribbling, weak or abnormal urine stream and palpable bladder suggest urinary obstruction.
- Patients with high fever (>39°C), systemic toxicity, persistent vomiting, dehydration, renal angle tenderness or raised creatinine are considered as having *complicated UTI.*
- Patients with low grade fever, dysuria, frequency and urgency and absence of symptoms of complicated UTI are considered to have *simple UTI.*

Diagnosis: [1,2]

- **Dipstick test:** Nitrites and leukocyte esterase are often positive in infected urine.
- **Urine culture:** Significant bacteriuria is defined as a colony count of $>10^5$/ml of a single species in a clean catch sample. It is diagnostic of UTI.
- **Other investigations:** USG and CT scan should be done in case of no recovery in the first line treatment to exclude other causes of UTI and treat accordingly.

Management: [1,2]

- **Conservative Management:**

1. All children with UTI are encouraged to take enough fluids and empty the bladder frequently to prevent stasis of urine.
2. Complete bladder emptying: Some toilet-trained children are in hurry to leave the bathroom. Encourage “double voiding” (urinating immediately after finishing the first void). Some children ignore the sensation of a full bladder in the desire to continue to play.
3. Wipe perineum from front to back during diaper changes or after using the toilet in older girls.

7. Treat and prevent constipation as it can be the predisposing factor in some cases.

Homoeopathic management:[3,4]

1. **Cannabis sativa**: Urethra very sensitive to touch or pressure; cannot walk with legs close together, it hurts the urethra. Pain extending from orifice of urethra backward, burning-biting, posteriorly more sticking, while urinating. Tearing pains along urethra in a zigzag direction. Obstinate constipation,causing retention of the urine.

2. **Cantharis**: Constant urging to urinate, passing but a few drops at the time,which is mixed with blood. Intolerable urging, before, during and after urination; violent pains in bladder. Burning, cutting pains in urethra during micturition; violent tenesmus and strangury.

3. **Pariera brava**: constant urging to urinate, with violent pain and straining, worse from midnight till morning. Strangury,ability to urinate only when on the knees and pressing head against the floor. The urine scalds the whole length of the urethra.

4. **Petroselinum**: Sudden urging to urinate. Child suddenly seized with desire to urinate; ifcannot be gratified at once, jumps up and down with pain. Burning,tingling from perineum throughout whole urethra. Frequent voluptuous tickling in fossa navicularis.

5. **Verbascum thapsus:** Constant dribbling with burning urination.

6. **Hydrangea arborescens:** Burning in urethra with frequent desire. Urine hard to start. UTI where the cause is stricture.

7. **Sulphur:** Frequent micturition, especially at night. Enuresis, especially in scrofulous, untidy children. Burning in urethra during micturition, lasts long after. Mucus and pus in urine; parts sore over which it passes. Must hurry, sudden call to urinate. Great quantities of colorless urine.

8. **E. Coli:** Recurrent UTI where the obvious cause is infection and not only covering UTI caused by E.coli but other bacterias too.

Some Specific rubrics related to symptoms of UTI in children from different repertories with their medicines:

1. **Kent's repertory:**[5]

1. **BLADDER:** Urging: painful: child cries: **Bor.**, lach., **Lyc.**, nux-v., **Sars.**
2. **BLADDER:** Urging: painful: child jumps up and down with pain, if cannot be gratified: *Petros*
3. **BLADDER:** Urging: painful: children grasp the genitals and cry out: **Acon.**, merc.
4. **BLADDER:** Urination: dysuria: painful, child cries before urine starts: **Bor.**, lach., *lyc., nux-v.,* **Sars.**

2. **URINARY ORGANS:** Urination: Difficult (dysuria): Children, in, during dentition :- *Erig.,* Rheum.
3. **URINARY ORGANS:** Urination: frequent: Minutes, every 3 or 5, child passes a large quantity :- Mag-p.
4. **URINARY ORGANS:** Urination: Urging (pressing): Children, ineffectual, in, cry impatiently and grasp abdomen :- Lyc.

3. **Synthesis repertory:**[7]

1. **BLADDER:** urination: dysuria: children, in: apis, bell
2. **BLADDER:** urination: dribbling: children; in: ferr
3. **BLADDER:** urging to urinate: painful: children: cry: apis, BORX, lach, LYC, *Nux-v,* SARS
4. **BLADDER:** urging to urinate: painful: children: grasp the genitals and cry out: ACON, merc
5. **BLADDER:** urging to urinate: painful: children: jump up and down with pain, if urging cannot be gratified: *Petros*
6. **MIND:** weeping: urination: before: children: sanic
7. **URINE:** burning: children: borx

Latest researches and case report related to UTI in Children in treated with homoeopathy:

1. **Title: "**Homoeopathic Medicine 'Cantharis 30CH' Substituted Antibiotic: A Case Report of Infantile Urinary Tract Infection."

Summary: In this case, they have prescribed Cantharis 30 CH, one globule dissolved in breast milk thrice daily to the 4 month old infant diagnosed with UTI showing plenty of leucocytes in urine routine and E.coli >100000 CFU/ml in urine culture and found a signicant improvement within 3 days with decrease in leucocytes in urine and no symptoms after 6 days of treament. Cantharis was selected on the basis of following symptoms: incessant crying, especially more before and while urinating; irritability and total loss of appetite. From this case, they concluded that administration of well selected homoeopathic similimum in right potency and dosage can replace antibiotics in cases of infantile UTI.[8]

2. **Title:** "A Randomised Non-controlled clinical study on UTI in Paediatrics and its management with homoeopathic medicines of 50 millesimal scale potency"

Summary: In this study, they prescribed homoeopathic medicines in 50 millesmial potency on the basis of symptom similarity in 30 paediatric cases diagnosed with UTI and found 21 cases recovered, 6 improved while 3 cases shown no improvement. Through this study the researchers concluded that 50 millesmial potency have a significant role in the management of UTI.[9]

Conclusion:

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