

Guidelines used in the management of paediatric patients with urinary tract infections in University hospital Trnava

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Introduction

- Globally, UTIs are a significant cause of morbidity of children younger than 2 years and adult patients in all age groups.
- Occurrence of UTIs changes depending on the age. The risk group of patients contains mostly febrile children younger than 1 year, where incidence is higher in boys (4%) and later the incidence is higher in girls younger than 6 years (7%).
- In the year 2014, the number of hospitalized patients with acute pyelonephritis in the age group 0-24 in Slovakia was 2391.

Introduction

- In children it is still difficult to reliably diagnose the disease due to non-specific symptoms. Correct and early diagnosis is important, because untreated infections lead to frequent recurrence and impairment in renal parenchyma, which might entail renal impairment.
- With the gradual awareness of the importance and benefits of evidence-based medicine in clinical practice, international and governmental organizations started to develop and implement practical guidelines.
- However, in practice we still find practices that are not based on the basis of evidence-based medicine and they contribute to inconsistent practices in the diagnosis and treatment of UTIs in children.

Aims

- To find available guidelines in the area of UTIs in children and their subsequent evaluation by a group of selected experts.
- To evaluate the use of each of the selected guideline recommendations in the management of UTIs in children who were hospitalized at the Paediatric Clinic at the University Hospital of Trnava in the years 2011-2015.



Methods

- Systematically searched for available guidelines in national and international databases of clinical guidelines that are listed on the website "*The Appraisal of Guidelines for Research & Evaluation*" and on the websites of professional urological companies:
 - *National Institute for Health and Care Excellence (NICE)*,
 - *Scottish Intercollegiate Guidelines Network (SIGN)*,
 - *The Guidelines International Network (GIN)*,
 - *National Guideline Clearinghouse (NGC)*,
 - *European Association of Urology and American Academy of Pediatrics*

Methods

- We found 8 available guidelines from various countries (England and Wales, Scotland, England, Spain, Czech Republic, Europe, USA and Canada)
- Available guidelines were:
 - *Urinary tract infection in children; diagnosis treatment and long- term management (NICE, 2007),*
 - *Management of suspected bacterial urinary tract infection in adults (SIGN, 2012),*
 - *Guidelines to prevent catheter-associated urinary tract infection (GIN, 2011),*
 - *Clinical Practice guidelines for urinary tract infection in children (NGC, 2009) ,*
 - *Guidelines on Urological Infections (EAU, 2013),*
 - *Clinical practice guideline for the Diagnosis and Management of the Initial UTI in febrile infants and children 2 to 24 months“ (AAP, 2011),*
 - *Recommendations for uinary tract infections – Czech republic*

Methods

- Using the eliminating criteria we created according to the ADAPTE method, we selected one guideline which we modified according to the conditions with selected experts
- Eliminating criteria: target group, year of publication, definition of health question, methodology of development, recommendations are clearly describe, availability of laboratory tests, country and cost.
- The selected guideline - „*Urinary tract infection in children; diagnosis treatment and long- term management*“ was evaluated by selected experts using the AGREE II. instrument
- Within the AGREE II. instrument the following domains are evaluated: Scope and purpose, Stakeholder Involvement, Rigor of Development, Clarity of Presentation, Applicability and Editorial Independence)

Methods

- Together with the experts, we prepared the standards that should be applied in practice in the following areas:

Diagnosis

- *Signs and symptoms* – Febrile children less than 5 years old, Fever $>38^{\circ}\text{C}$, Duration of fever more than 3days
- *Positive urine culture* - defined as growth of $>10^5$ colonies of a single urinary tract pathogen/ml of specimen in a mid/stream sample of urine

Treatment

- *Children < 3 months* – parenteral ATB (ampicillin+aminoglycosides)
- *Children > 3 months (with APN)*– cephalosporins 2nd Generation or 3rd Generation (7-10 days) or aminoglycosides
- *Children > 3 months (with cystitis)* – trimethoprim, nitrofurantoin or cotrimoxazole
- *Asymptomatic bacteriuria* - not treatment ATB!

Imaging tests

- *Ultrasound, DMSA, MCUG*

Conclusion

- There is a lack of national consensus for the diagnosis and treatment of UTIs in our country. Therefore in practice it is necessary to apply at least the selected recommendations that are based on evidence and are published by national or European organizations.
- By applying of the recommendations we can limit the consequences of late diagnosis of UTIs, relapse and spread of antibiotic resistance.



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THANK YOU FOR ATTENTION!