The Hearing Aid Podcasts

Episode 2.5 Show Notes
Urinary Tract Infections in Older Adults

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Learning Outcomes

Knowledge

- To know how the symptoms of a UTI may differ in older adults
- To recall some complications of UTIs in older adults
- To understand the contributing factors that make older adults susceptible to UTI

Skills

- To be able to interpret the common investigations in the diagnosis and management of UTIs
- To know how to perform a bladder scan looking for retention of urine following micturition.

Attitudes

- To not assume all lower urinary tract symptoms are due to UTIs
- To question a diagnosis of UTI when it has been made without full facts

Definitions:

- An infection of urinary tract (anywhere from the kidneys down to urethra via the bladder)
- Recurrent urinary tract infection is defined as three episodes of urinary tract infection (UTI) in the previous 12 months or two episodes in the last six months.
- What it is not!
    - Acute trimethoprim deficiency! (courtesy of @seangn)
    - The root source of all 'confusion query cause' [ep 2 on delirium]
    - Proven or diagnosed by a 'positive' dipstick alone

Key Points from Discussion

Symptoms:

- The common (*specific*) symptoms are: Dysuria (pain on urination), urinary frequency ('cystitis'), blood or pus in urine, feeling of incomplete emptying and or lower abdominal pain
- A UTI can be a cause of new urinary incontinence - and should be excluded when treating UI - particularly OAB symptoms (infection irritates lining of bladder) [ep3 on continence]
- There may be a number of *non-specific* symptoms which could be common to any infection: delirium, reduced appetite, newly reduced mobility leading to falls, nausea.

Making the diagnosis:

- A criteria for diagnosing UTIs in Nursing Home residents (without catheters) has been developed by Infectious Disease Consensus Groups:

1. Bacteriuria **plus** pyuria (i.e. >10 WBC/ml)
2. **AND** 2/3 of:
    - Dysuria
    - Change in mental state
    - Change in character of urine

Diagnosis, Prevention, and Treatment of Catheter Associated Urinary Tract Infection in Adults: 2009 International Clinical Practice Guidelines from the Infectious Diseases Society of America.

A nice review of this is here on a BMJ podcast.

Complicated UTI:
Essentially when there is something else going on - *Important in terms of thinking about the cause but also knowing this may affect your choice of treatment.*

- Structural abnormality e.g. cystocele / fistula (Men who have symptoms of an upper urinary tract infection should be referred for urological investigation - as per NICE QS 90)
- Iatrogenic: catheter
- Voiding dysfunction e.g. high post void residual (talk through how to do), reflux into ureters
- Obstruction e.g. stone or bladder outflow obstruction, constipation
- Diabetes / immunosuppression*

To dip or not to dip?

- In conjunction with symptoms, dipsticks can have a sensitivity around 77% - so not too bad!...however - as a 'screening test' in ***absence*** of actual urinary symptoms, and just in someone presenting with confusion it is 44% - worse than flipping a coin!

Juthani-Metha et al. Clinical features to identify urinary tract infection in nursing home residents: a cohort study. J Am Geriatr Soc. 2009 Jun;57(6):963-70.

- The frequency of positive urine dips in institutional care is very high - this is due to the fact that upto 50% of females in nursing homes, have asymptomatic bacturia - in non-care home residents this is a little less - ranging from 6 to 16% in females aged 65-90.

American Society of Nephrology Chapter 32: Urinary Tract Infections in Elderly Persons Manisha Juthani-Mehta

- One study found that the negative predictive value of a urine dipstick was 100% for Nursing Home residents (i.e. this means that you can have a very high confidence that a negative result is true (i.e there is no infection)).

Juthani-Mehta M, Tinetti M, Perrelli E, Towle V, Quagliarello V. Role of dipstick testing in the evaluation of urinary tract infection in nursing home residents. Infect Control Hosp Epidemiol.2007;28(7):889–891.

- When a person has a urinary catheter in situ - the changes of this being colonised with bacteria is around 100%! - and so urine dipsticks are useless if someone has a urinary catheter - so don't send one and certainly don't treat an asymptomatic patient on the basis of a dipstick!

Warren JW, Tenney JH, Hoopes JM, Muncie HL, Anthony WC: A prospective microbiologic study of bacteriuria in patients with chronic indwelling urethral catheters. J Infect Dis 146: 719 –723, 1982
NICE QS 90

Here is some good and easy to follow guidance from the British Geriatrics Society - However sepsis trumps all and if your patient is septic - start the most appropriate antibiotic rapidly and follow the sepsis guidance (being very frail puts you into a higher risk group). (NICE Sepsis guidance NG 51)

Patient history	Symptoms	Signs	Urine dip
Clear and unambiguous	New onset of frequency, dysuria;	Abdominal pain Haematuria Offensive smelling urine Fever	Negative – seek other cause. Do not send MSU
			Positive for leucocytes and nitrites – likely UTI, send MSU and treat
	No urinary symptoms		Do not dip urine, do not send MSU

Lacking because of communication barriers	Increased confusion, apathy, irritability (delirium), reduced mobility, off food	Abdominal pain Haematuria Offensive smelling urine Fever	Negative – seek other cause. Do not send MSU
			Positive for leucocytes and nitrites – likely UTI, send MSU and treat
			Leucocyte positive only – seek alternative diagnosis Nitrite positive only – send MSU and start treatment

BGS Silver book - page 35

When starting treatment always think about the need for an MSU - which should ideally be a sample of urine taken from the middle of the urinary stream (so a clean catch - not something taken from a pad etc. if at all possible!).

Treatment

Follow your local guidelines for antibiotic choice - Treatment is generally 3 days for women and 7 days for men.

Other things to think about:

- Cranberry juice: inconclusive evidence for both juice and supplements (Cochrane review here)
- Lemon barley (can help with pain of cystitis but does not remove infection!)
- Prophylactic antibiotics: usually not favoured…. Can reduce infections by 0.15 events per year but lots of side effects found in study.

  See also NICE quality standard 90.
- Topical vaginal oestrogens (useful when there is vaginal atrophy and recurrent UTIs): Available as cream or ring pessaries (latter changed every 12 weeks), former needs manual dexterity and capacity to consent to potentially invasive treatments. Can cause local irritation in up to 20%. Sometimes dysuria is related to this rather than a UTI anyway.

Oestrogens and Recurrent UTIs
Cochrane review oestrogen treatment and UTI

Considerations for community treatment vs hospital admission:

- Able to be treated with oral antibiotics + able to be compliant with taking these?
- Able to maintain adequate hydration (remember to drink plus access to drinks)
- Access to bathroom (frequency and potential decrease in mobility): or commode?
- Decompensation of other conditions may occur: can these be managed at home too?

Curriculum Mapping:

This episode covers the following areas (n.b not all areas are covered in detail in this single episode):

Curriculum	Area	
NHS Knowledge Skills Framework	Suitable to support staff at the following levels: • Personal and People Development: Levels 1-3 • Service Improvement: Level 1 - 2	
Foundation curriculum	**Section** 7.2 7.3 11	**Title** History and examination Diagnosis and clinical decision-making Investigations
Core Medical Training	Team working and patient safety Communication with colleagues and cooperation Evidence and guidelines Micturition Difficulties Polyuria Investigations Geriatric Medicine	
GPVTS program	Section 3.05 - Managing older adults • Core Competence: Managing medical complexity • Core Competence: Data gathering and interpretation	

	• Core Competence: Clinical management • Core Competence: Working with colleagues and in teams
ANP (Draws from KSF)	Section 4 - History taking skills Section 6 - Clinical Examination Section 7.8 - Urine retention, incontinence and infection Section 8 - Atypical presentations
PA Matrix	11 - Cystitis
College of Paramedics Curriculum Guidance	C2.6.8 Formulate a diagnosis from the analysis of clinical examination, history and vital signs assessment findings.C 2.6.9 Identify the need for further assessment, intervention or referral to specialist or advanced paramedics, or other services, care pathways or agencies.

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