

OVERDIAGNOSIS OF URINARY TRACT INFECTIONS IN ELDERLY PATIENTS

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INTRODUCTION

Antibiotics for presumed urinary tract infections (UTIs) may be prescribed for some elderly people based on little more than a positive dipstick test.

Repeated courses may be given.

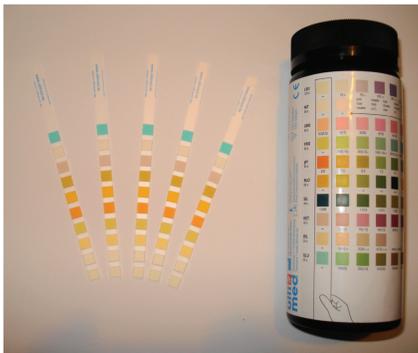
Possibility of Asymptomatic Bacteriuria

For a significant number of older patients, if there are no clinical features suggesting UTI, the patient may have asymptomatic bacteriuria.¹⁻⁸

Antibiotic treatment is NOT recommended for asymptomatic bacteriuria³⁻⁶ It will not reduce the risk of future symptomatic infections or improve clinical outcome.⁴⁻⁶ It occurs in 10% of men & 25% of women >65yrs of age (A higher incidence in patients in long term care institutions^{2,5})

Both Dipstick tests (Nitrite for bacteria & Leucocyte esterase for White Blood Cells*) AND Urine Cultures may be positive in asymptomatic bacteriuria⁷

(*WBCs may also be present because of contamination (common in elderly patients) – and in other conditions including inflammation or infection anywhere in the GU tract)



AUDITS IN OUR ELDERLY CARE UNIT

In an initial month's audit, 38% of all antibiotics prescribed were for 'UTI' (14 out of 36 antibiotic courses for 30 patients admitted)

New antibiotic guidance was introduced & restriction of antibiotic use was undertaken

In a further month's audit of 41 admitted patients, 19 patients had 34 urines investigated for possible infection

Number of patients who had a significant growth detected.....11 (58 % of 19 tested)
Number of patients with clinical symptoms of UTI 5 (26% of 19 tested)

(Most urine specimens were mid-stream/clean catch or catheter specimens – these details not specified for 5 patients)

Findings -- Only the 5 patients with clinical symptoms needed antibiotics for UTI (Only 3 patients with a positive dipstick result required treatment)

- Number of antibiotic courses for UTI reduced from 38% to 20%
- Number of patients on antibiotics for all causes reduced from 87% to 41%
- C.difficile associated diarrhoea reduced from 33% to 2.4%

Comment

If antibiotics had been based on microbiological results alone, treatment for UTI could have been inappropriately given in a further 6 (31.6%) of patients

Other Hospital Studies

In an audit, Ninan⁸ found 19/25 i.e. 76% patients treated for a presumed UTI had no clinical evidence of it.

Woodford & George studied 265 patients and found UTI incorrectly diagnosed in approx 40% of patients.⁷

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UTIs Requiring Antibiotic Treatment

Clinically relevant UTIs are also common in elderly patients & can be accompanied by bacteraemia^{1,9}

Antibiotics are necessary

Presenting features in the elderly include the following -
dysuria, fever > 38°C, new incontinence etc &/or signs of systemic sepsis

PROBLEM –

Accurate diagnosis of UTI requiring antibiotics in the elderly can be challenging¹⁰

In some elderly patients, especially those with confusion due to cognitive impairment, dementia or delirium, symptoms may not be easy to detect
If these patients are pyrexial or more confused than normal, they could have a UTI requiring treatment

BUT

Other diagnoses also need consideration

– bacteria detected in the urine may just be coincidental asymptomatic bacteriuria.⁶

Laboratory tests that may help with diagnosis

- Dipstick & urine clarity for their **Negative Predictive Value** – controversial^{2,3,10}
- Future - Urinary cytokine and levels of leucocyte esterase to distinguish between asymptomatic bacteriuria and symptomatic UTI in the elderly - Further work required. (Rodhe *et al Scand J Primary Health Care* 2009).

RISKS OF UNNECESSARY ANTIBIOTIC TREATMENT

- Treating asymptomatic bacteriuria may divert attention from the correct diagnosis
- Risk of antibiotic side effects, including *Clostridium difficile* associated diarrhoea & overgrowth of *Candida* spp.
- Risk of increasing antibiotic resistance



RECOMMENDATIONS TO HELP PREVENT OVERDIAGNOSIS

1.CAUTION in interpreting microbiological tests& in giving antibiotics for UTI without relevant symptoms

Irrespective of a positive dipstick or bacterial culture, elderly patients, (including those with non-specific symptoms such as feeling tired or vaguely unwell) **require clinical assessment before a diagnosis of a clinically relevant UTI can be made.**^{4,5}

2. Avoid indiscriminate screening of urine in elderly people.

Screening not indicated if elderly patient not confused and no UTI symptoms

3. Follow the Health Protection Agency Primary Care Guidance⁵

Consider the presence or absence of clinical signs & symptoms of possible UTI, as well as the urine investigation results.

Could the patient have asymptomatic bacteriuria?

If the elderly patient is unable communicate whether urinary symptoms are present – look for suggestive clinical signs of UTI

but also consider the possibility of other causes

4.Avoid unnecessary use of urinary catheters

Limit the length of time catheters are used, where possible¹

NB Organisms are frequently grown from catheter urine --if there are no clinical features suggesting infection, **antibiotic treatment is not indicated**^{1,5,6}

5.Involve patients in simple methods of preventing UTIs requiring treatment.

Including maintaining a good fluid intake.(see Hand Out)