

UTI antibiotic stewardship in a UK Hospice: two audit cycles spanning two years and more than 500 patients



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Introduction

Despite high antibiotic prescribing rates for urinary tract infections (UTI) at the end of life, the evidence suggests little or no symptomatic benefit in > 50% of patients. This leads to concerns around the rigour underpinning UTI diagnosis in hospice inpatient settings and the lack of an applicable evidence base, with clear but conflicting antimicrobial guidelines in other populations. Over two audit cycles this review of > 500 patients identified the incidence of suspected UTI's in an inpatient hospice setting, their investigation, management and the issues arising.

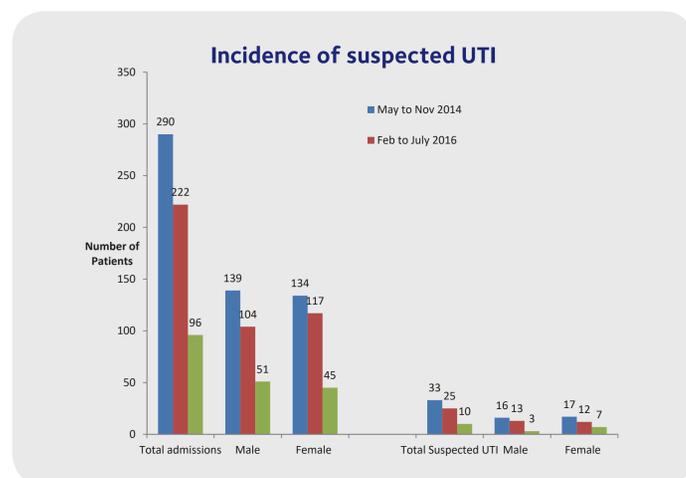
Methodology

- Retrospective notes based review of 6 months consecutive admissions 1st May to 30th November 2014 and 1st February to 31st July 2016
- Retrospective notes-based review of community patients who died in July 2016 for evidence of symptoms of, or diagnosis of UTI

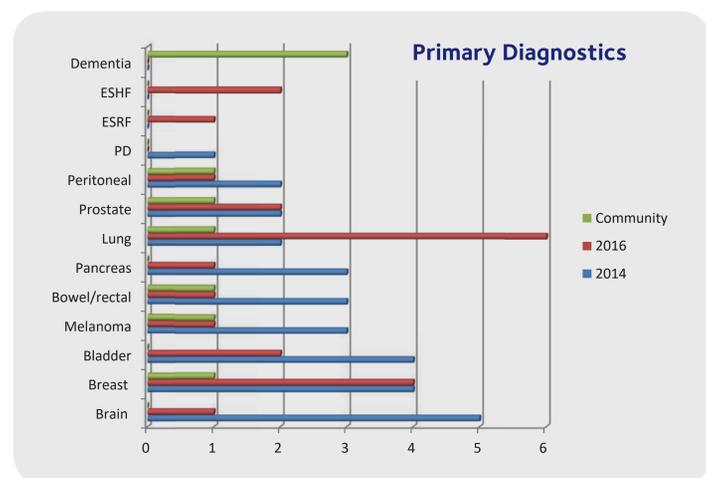
Aims

- Identify incidence of hospice inpatients suspected to have a UTI
- Identify incidence of UTI & dysuria in community patients in the last 30 days of their life
- Review investigations undertaken, actions taken & where known effectiveness
- Assess diagnosis & management of UTI against standards for antimicrobial stewardship
- Identify any variance in the management of patients with suspected UTI and good practice

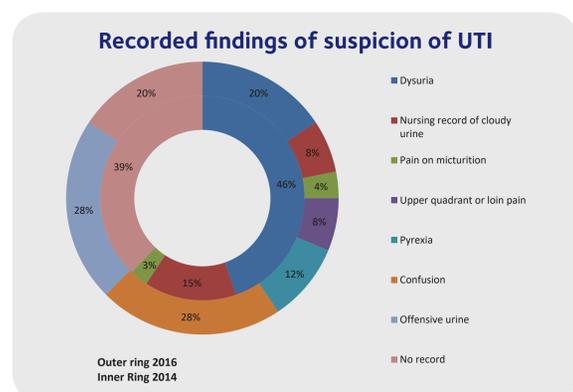
Results



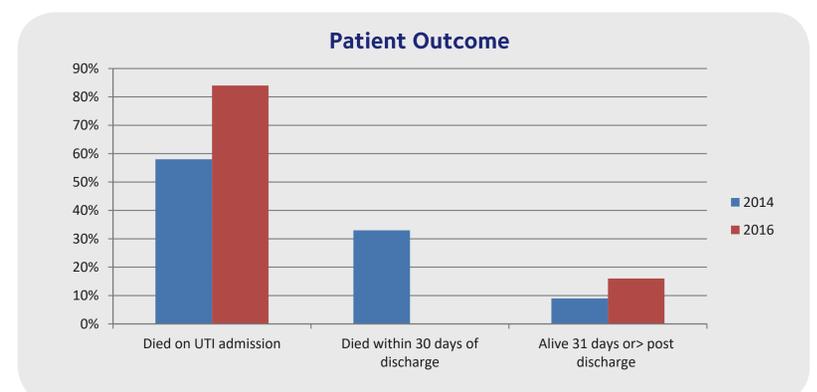
- Overall incidence at 11.4% in May 2014; 11.3% in 2016, with community incidence of 10.4% and gender incidence was consistent.
- Average length of stay increased slightly from 11.2 days to 12.9 days with average length for the UTI suspected patient group increasing from 15.2 to 22.3 days.



- No primary diagnosis was predictive for an increased likelihood of UTI suspicion.



- Some patients had multiple symptoms recorded and some had none- since 2014 there was a clear tendency for more specific recording of symptoms.
- In 2014, 82% of patients were recorded as having a urine dip and improving by 2016 to 96%.
- Urine dip result recording was inconsistent and in 2014 only 11% were recorded by specific contents and their strength; improving to 62.5% in 2016.
- A catheter in situ did not seem to increase incidence – in 2014, 54.5% of patients had a catheter in situ in 2016, 16% and in the community 40%.



Antimicrobial prescribing

- There was a fall in the number of samples sent for MC&S from 79% to 56% along with improved documentation of why samples were not sent – consistent with an overall improvement in the rigour of clinical decision making.
- A significant improvement in recording results of MC&S samples in patients records from 27% to 93%.
- Improvement in correlation between MC&S sent and proven infection from 53% to 77% and a corresponding improvement in patients being treated with the correct antibiotic for their MC&S results up from 56% to 100%.
- There was an improvement from 38% to 75% for patients who did not meet the criteria for antibiotics being correctly managed.
- There was some evidence of medicines rationalisation at end of life with an improvement from 0 to 8% of the patients receiving antibiotic treatment having these stopped at the end of life. Those remaining on antibiotics at the time of their death was consistent at 1% and 1.4%
- Microbiology involvement in antibiotic selection was evident in 2016 with a broader range of antibiotics used including Ertapenem and fosfomycin.

Recommendations

1. Clear signs and symptoms for a UTI should prompt urinalysis but routine urinalysis on admission or for patients who are non-specifically unwell is not helpful.
2. Detailed recording of urinalysis findings is required – negative or positive does not guide management.
3. Patients admitted to hospice have increased likelihood of meeting criteria for potential resistance and microbiology advice should be sought early if there is no symptomatic improvement to treatment.
4. Hospice inpatients are likely to meet the criteria for complex UTI's and the default position for prescribing should be a 7 day rather than 3 day course of antimicrobials.

Conclusions

- Incidence of UTI at end of life remained consistent across time and settings at 10–11%.
- Qualitative analysis showed improved rigour in assessment of key symptoms, more targeted investigations and response to culture results.
- There was also a marked improvement in appropriate and targeted antimicrobial therapy.
- Patient outcomes were in keeping with overall hospice discharge outcomes and the increase in the number of patients who died on the relevant admission appeared to reflect the growing complexity of patients admitted to the hospice.
- There is an increased length of stay in patients with a suspected UTI more research is needed to assess whether this is due to specific vulnerabilities prior to admission (primary diagnosis, social factors, or co morbidities,) complexity of admitting symptoms or as a result of the UTI itself.
- There was evidence of medicine rationalisation at the end of life but more research is still needed about the symptom benefit achieved in treating UTI's in the last few days of life.

