

Evaluation of the clinical impact of routine screening for asymptomatic bacteriuria amongst kidney transplant recipients in the immediate post-operative period

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Background:

In the United Kingdom there are no national guidelines regarding the routine screening for bacteriuria in renal transplant recipients. Furthermore, there is a lack of evidence to support routine antibiotic treatment for asymptomatic bacteriuria in this patient population. Our local transplant unit guidelines advise that, in the immediate post-operative period, until discharge from hospital, kidney transplant recipients should have thrice weekly urine culture screening for bacteriuria. In view of this, an observational study to evaluate the clinical impact of this screening process was conducted, focusing on: the likelihood of urine culture-positivity; the proportion of patients with bacteriuria with clinical symptoms and signs of infection; and the proportion of patients in whom routine screening for bacteriuria altered clinical management.

Method:

Over a three-month period, between 1st October 2018 and 31st December 2018, urine specimens and clinical data were obtained from all post-operative kidney transplant recipients admitted to a tertiary referral unit for renal transplantation. At the time of urine sampling, the presence of symptoms and signs suggestive of urinary tract infection (UTI) were prospectively noted. At the end of the study period, patients' records were reviewed to collect relevant data on their clinical management.

Results:

Twenty-seven patients were transplanted during the study period and 139 urine samples were cultured. Of these samples, 120 (86.7%) were culture-negative and 128 (92%) were collected from patients without clinical symptoms or signs suggestive of UTI. Ten of the 27 patients accounted for the 19 culture-positive urine samples. Two of these patients were symptomatic and treated according to their urine culture results. Conversely, only 2 out of 8 asymptomatic patients were treated. No infection-related adverse events or emergency re-admissions occurred in the remaining 6 patients with asymptomatic bacteriuria who did not receive antibiotic therapy. Of the 27 patients studied, routine urine culture altered clinical management in 2 (7.4%), with both asymptomatic patients receiving a course of oral antibiotics.

Discussion:

The majority of routine screening for bacteriuria in post-operative renal transplant recipients does not yield positive culture results. Over half the episodes of bacteriuria were asymptomatic. Individual clinical practice varies when managing asymptomatic bacteriuria, with the majority of patients not treated with antibiotics, which reflects a lack of evidence in support of treating asymptomatic bacteriuria. Of the four patients who received antibiotics for bacteriuria, two had clinical signs of UTI and urine culture was organised by the attending physician due to clinical concern. The prescription of antibiotics for two patients with asymptomatic bacteriuria was in the context of a complicated post-operative period.

In conclusion, routine screening for bacteriuria rarely alters clinical management of kidney transplant recipients in the immediate post-operative period. Local guidelines have been changed to reflect this finding, with routine urine culture no longer recommended. Instead, screening for asymptomatic bacteriuria

should only be undertaken in those patients who are deemed to be at considerably higher risk for urinary tract infection. Further evaluation of clinical outcomes of asymptomatic bacteriuria in the outpatient renal transplant population is currently underway.