

RECURRENT URINARY TRACT INFECTIONS IN KIDNEY TRANSPLANT RECIPIENTS DURING THE FIRST YEAR INFLUENCE LONG-TERM GRAFT FUNCTION



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INTRODUCTION

Urinary tract infections (UTI) are among the most frequent infectious complications after kidney transplantation and can be associated with significant morbidity. However, data on the impact of UTI on graft survival are controversial.

METHODS

We conducted a retrospective cohort study of 380 patients who underwent kidney transplantation at our Transplant Centre from January 2008 through September 2015. The presence of UTI was defined as urine culture with more than 10⁵ colony-forming units (CFU) per mL or more than 10³ CFU/mL with urinary tract symptoms. Recipients with UTIs during the first year after transplantation were categorized into three groups: early (<3 episodes from months 1st to 6th), late (<3 episodes during months 7th to 12th) and recurrent (>3 episodes throughout the whole first year). Graft function assessed at three years after transplantation was considered the primary outcome.

RESULTS

UTI occurred in 184 (48.4%) kidney transplant recipients during the first year. In particular, 83 (21.8%) patients developed early UTI, 50 (13.2%) late UTI and 51 (13.4%) recurrent UTI (Figure 1). We observed a significant improvement in graft function compared to nadir after three years in all patients ($P < 0.001$) except those who had recurrent UTI (Figure 2). A Kaplan–Meier survival curve using eGFR value $< 60 \text{ mL/min/1.73m}$ as endpoint showed that recipient with recurrent UTI had the worst graft outcome ($P = 0.02$) during a three year follow up (Figure 3). A multivariate survival analysis revealed that recurrent UTI were an independent predictor of graft function at three years in a model adjusted for gender, age, BMI, DGF, acute rejection and CMV infection (hazard ratio, 1.519; 95% CI, 1.033 to 2.232; $P = 0.03$).

CONCLUSIONS

Recurrent UTI during the first year after kidney transplantation have negative impact on graft function at three years. Transplant recipients should be closely monitored to establish an appropriate prevention and/or treatment.

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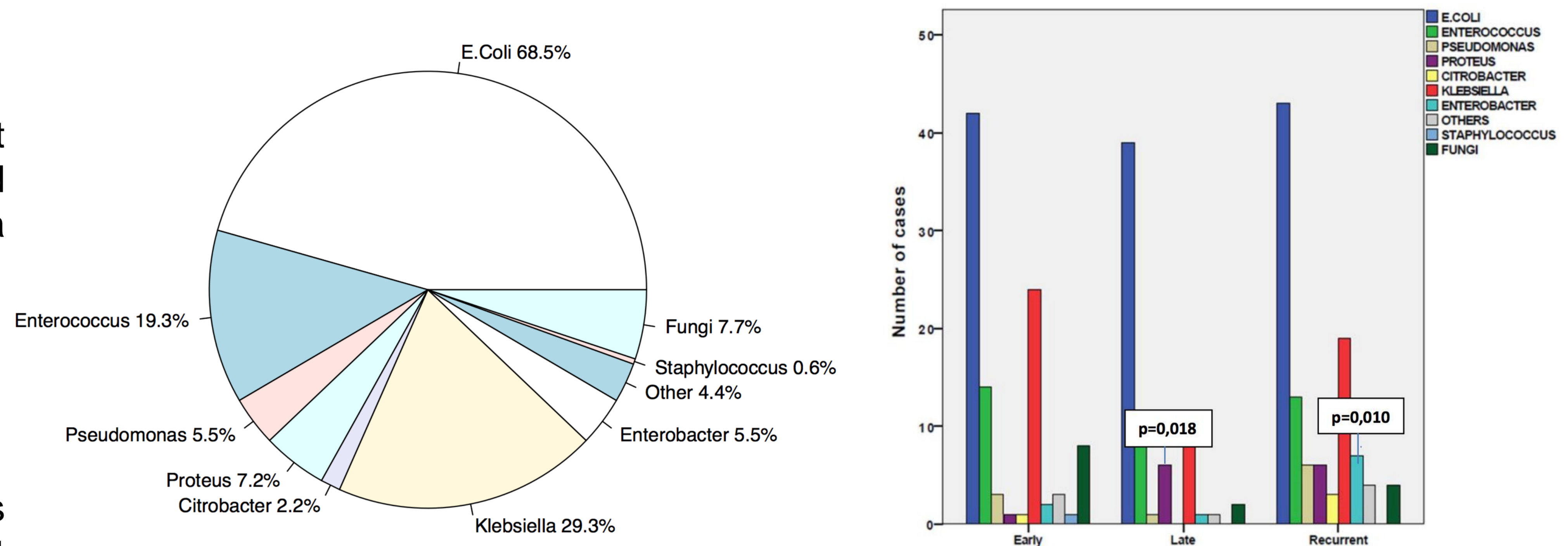


Figure 1. Prevalence of pathogens, overall (A) and by type of urinary infection (B)

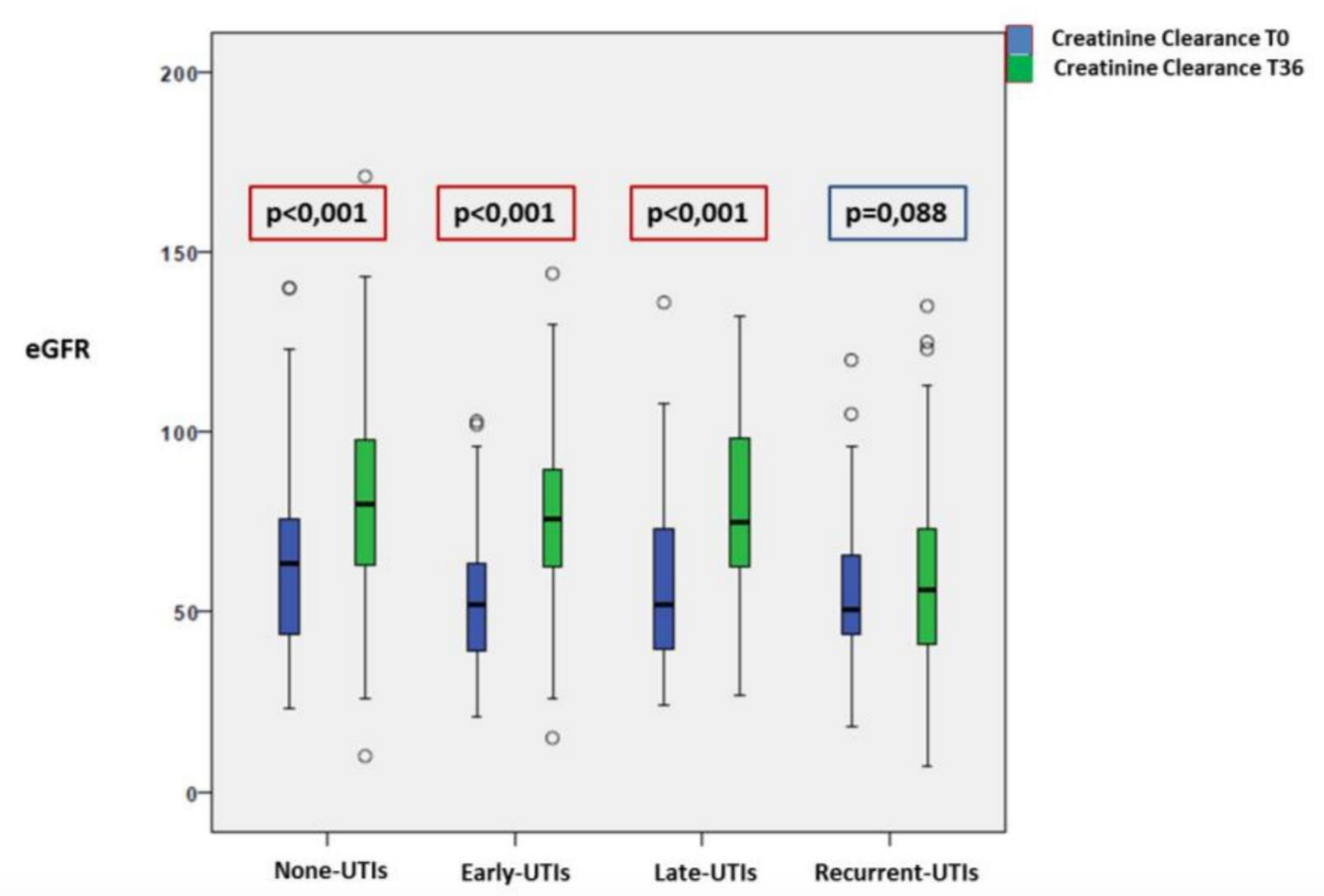


Figure 2. Creatinine clearance at nadir (T0) and 36 months after transplantation (T36) in kidney transplant recipients stratified by type of urinary infections.

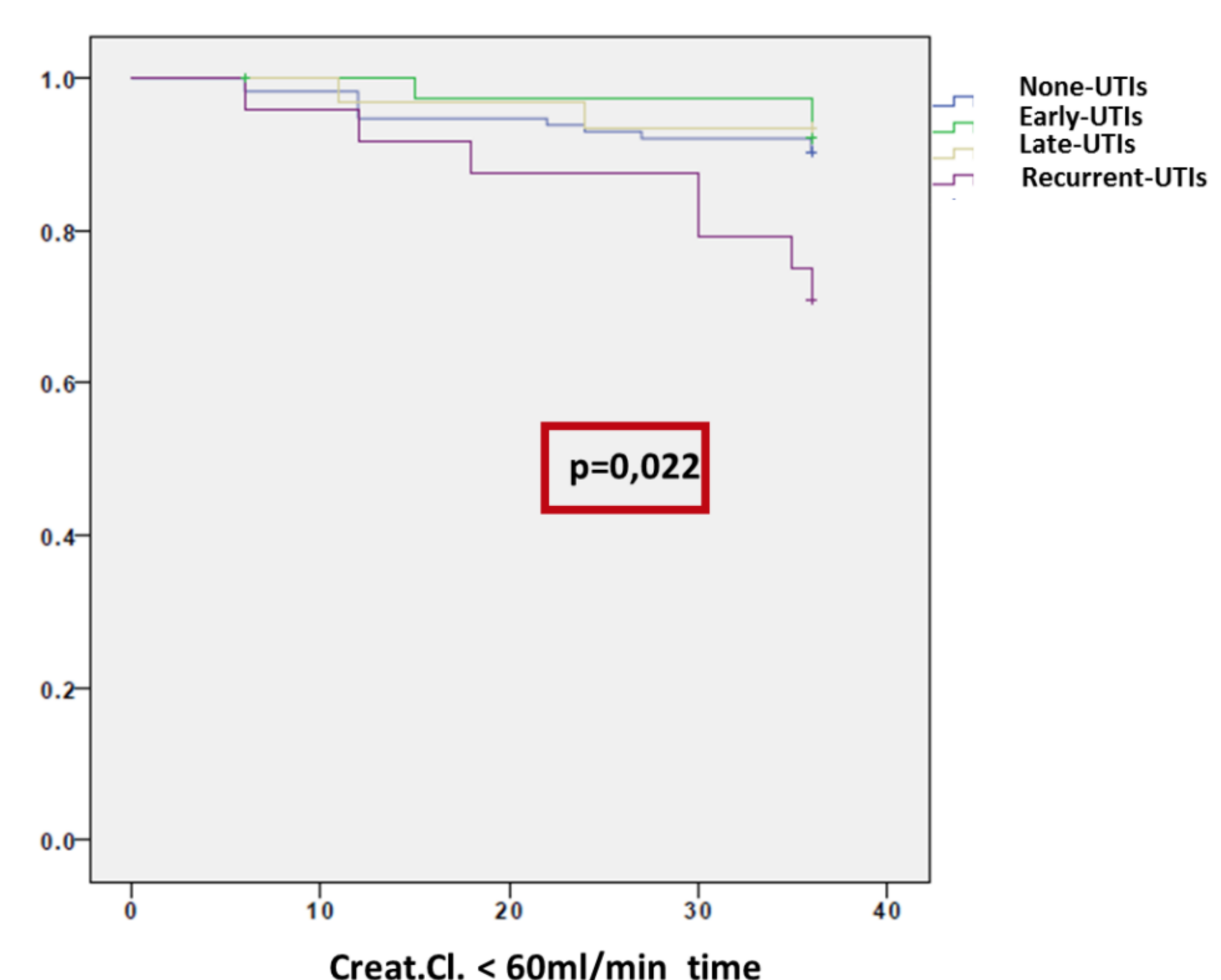


Figure 3. Kaplan–Meier curve showing the graft survival according to the different categories of urinary tract infections, using a creatinine clearance $< 60 \text{ mL/min}$ as endpoint.

