INTRODUCTION

Data on recovery of AKI is mainly limited to persistent dialysis-dependency in patients with dialysis-requiring AKI, whereas results on recovery from less severe forms of AKI are scarce.

METHODS

This analysis was performed in a large database (n=4640) from a previous RCT including a heterogeneous population of ICU patients. Patients with end-stage renal disease and kidney transplantation were excluded. In the remaining 4560 patients we estimated renal recovery from different stages of AKI defined by KDIGO criteria (without urine output criteria).

Patients were classified according to their maximal AKI stage (AKI\text{max}) during ICU stay. Recovery was evaluated by AKI stage at hospital discharge. Complete recovery was defined as the absence of AKI, partial recovery as persistent AKI with a decrease in AKI stage compared with AKI\text{max} and no recovery as persistence of AKI\text{max} or worsening of AKI after ICU discharge. A persistent 0.3mg/dL increase of serum creatinine was also considered as no or partial recovery.

RESULTS

1296 patients (28%) developed AKI. AKI\text{max} was stage 1 in 580 patients (45%) (416 with >50% increase of Scr\text{eat}), stage 2 in 207 patients (16%) and stage 3 in 509 patients (39%), 348 of them requiring RRT. Incidence, hospital mortality, ICU and hospital stay and kidney outcome according to AKI stage are shown in Figs 1-3. Increasing severity of AKI significantly increased mortality and the risk of worse kidney outcome. Within the AKI 3 group the need for RRT significantly increased mortality (p<0.0001) and affected the pattern of recovery (p=0.0006), mainly due to more persistent AKI 3 (18% remained in stage 3, 16% dialysis-dependent) (p<0.0001).

The incidence of complete recovery in survivors was, however, not significantly different (51% vs 58%; p=0.23) (Table 1). Patients with stage 1 AKI\text{max} by 0.3mg/dL increase of serum creatinine only had a significantly higher mortality than patients without AKI in ICU (p<0.0001) and a worse kidney outcome at hospital discharge (p<0.0001) (Table 2).

CONCLUSION

Increasing severity of AKI according to the KDIGO criteria is associated with increased mortality and decreased kidney function recovery. The need for RRT significantly increases mortality and the risk of persistent AKI 3, but complete recovery in survivors is similar with or without RRT. The 0.3mg/dL criterion is associated with increased mortality and a worse kidney outcome.