

Expanded renal transplantation: a competing risk model approach

Martínez-Cambor P.

de Uña-Álvarez J.

Corte C.D.

Multi-state models (MSMs) are useful to analyze survival data when, besides the event of main interest, one or more intermediate states of the individual are identified. These models take the several existing states and the possible transitions among them into account. At the same time, covariate effects on each transition intensity may be investigated separately and, therefore, MSMs are more flexible than the standard Cox proportional hazards model. In this work, we use MSMs to investigate the impact of the quality of a transplanted kidney for a group of patients at the Hospital Universitario Central de Asturias. Specifically, we use an illness-death model to study the evolution of patients with kidney disease who received a renal transplant after a dialysis period. The intermediate state is defined as the failure of the received organ, while the terminating state is the death of the patient. In order to increase the potential number of organs available for transplant, the standards of quality for the transplanted kidneys were relaxed (the new criteria are labeled expanded criteria), and these ?expanded kidneys? were transplanted in appropriate candidates (older patients, with higher prevalence of diabetes mellitus). Results suggest that the expanded kidneys have a minor effect on survival, while both the kidney mortality and the risk of death increase with the patient's age and the serum creatinine and serum hemoglobin levels. © 2015

Taylor & Francis.

competing risks

cumulative incidence

illness-death models

renal transplantation

survival analysis

transitionintensities

