

ANALYSIS OF COMPETITIVE RISK: AN APPLICATION TO THE DATA OF HEMODIALYSIS IN THE CITY OF LAVRAS – MG - BRAZIL

Graziela Dutra Rocha GOUVÊA¹
Fernando Luiz Pereira de OLIVEIRA²
Mário Javier Ferrua VIVANCO¹

- **ABSTRACT:** *In this study we used the model proposed by Wei, Lin and Weissfeld (1989) to analyze the effect of covariates in time for the occurrence of an event, death or renal transplantation, in 395 patients with chronic renal failure treated at the Center of Renal Replacement Therapy of Santa Casa de Misericórdia de Lavras, MG - Brazil, from January 1994 to September 2008. The events were considered competitive, as the occurrence of one event excludes the possibility of the other. It was concluded, in relation to the covariate sex, that a female patient has 1.40 times greater risk of dying or requiring transplantation at each unit of time than a male patient. Results suggest that the patient who suffers kidney failure due to diabetes has 84% higher risk of death without transplant, compared with a patient whose cause is hypertension. However, this result does not mean that the risk of dying and the risk of requiring transplant are the same, because the baseline risk for each event is different. The effect of having diabetes is significant at the 0.10 level for deaths due to renal causes, and not statistically significant for transplantation.*
- **KEY-WORDS:** *Renal impairment, stratified Cox model, marginal model.*

¹ Departamento de Ciências Exatas, Universidade Federal de Lavras – UFLA, Caixa. Postal 3037, CEP: 37200-000, Lavras, MG, Brasil. E-mail: gragouvea@yahoo.com.br / ferrua@ufla.br

² Departamento de Estatística, Instituto de Ciências Exatas, Universidade Federal de Minas Gerais -UFMG, CEP: 31270-901, Belo Horizonte, MG, Brasil. E-mail: fernandoluizoliveira@ufmg.br