J Nephrol Ther 2018, Volume 8
DOI: 10.4172/2161-0959-C4-061

Factors influencing survival time of hemodialysis patients, a time to event analysis using parametric models: A cohort study

Seyed Jalil Masoumi, Vahid Ebrahimi, Mohammad Hossein Khademian, Mohammad Reza Morvaridi and Shahrokh Ezzatzadegan Jahromi
Shiraz University of Medical Sciences, Iran

Introduction & Aim: Survival analysis of patients on maintenance hemodialysis (HD) has been the subject of many studies. No study evaluated the effect of different factors on the survival time of these patients. We aimed to find factors affecting survival by using parametric survival models and the effect of them on the survival time.

Methods: As a retrospective cohort study, we evaluated the data of 1408 HD patients and considered the data of patients who had at least 3 months of HD and started HD from December 2011 to February 2016. The data were extracted from Shiraz University of Medical Sciences (SUMS) special diseases database. Primary event was death. We applied Cox-adjusted pH to find the variables with significant effect on hazards of death. The effect of various factors on the survival time was evaluated by a parametric event-time model, the one found to have the best fit by Akaike Information Criterion (AIC).

Results: Of 428 HD patients eligible for the analysis, 221 (52%) experienced death. With the mean±SD age of 60±16 years and BMI of 23±4.6 Kg/m2, there are 250 men (58%) among them. The median of the survival time (95% CI) was 624 days (550 to 716). The overall 1, 2, 3 and 4 year survival rates for the patients undergoing HD were 74%, 42%, 25% and 17% respectively. By using AIC, AFT log-normal model was recognized as the best functional form of the survival time. Cox-adjusted pH results showed that the amount of Ultrafiltration Volume (UF) (HR=1.146, P=0.049), WBC count (HR=1.039, P=0.001), RBC count (HR=0.817, P=0.044), MCHC (HR=0.887, P=0.001) and serum albumin (HR=0.616, P<0.001) had significant effect on mortality. AFT log-normal model indicated that WBC (ETR=0.982, P=0.018), RBC (ETR=1.131, P=0.023), MCHC (ETR=1.067, P=0.001) and serum albumin (ETR=1.232, 0.002) had significant influence on the survival time.

Conclusion: Considering Cox-adjusted pH and three parametric event-time models, the parametric AFT log-normal had the best efficiency in determining factors influencing HD patients' survival. Resulted from this model, WBC and RBC count, MCHC and serum albumin are factors significantly affecting survival time of HD patients

biostat.ebrahimiv@gmail.com
m.r.morvaridi@gmail.com