

عنوان مقاله:

One-month Survival Following Road Traffic Accidents in a Level-I Trauma Center, Parametric versus Semi-Parametric Survival Models

محل انتشار:

دهمین سمینار بین المللی کاهش سوانح ترافیکی، چالش ها و راهکارهای پیش رو (سال: 1398)

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خلاصه مقاله:

Introduction: Simulation studies present an important statistical tool to investigate the performance, properties and adequacy of statistical models in pre-specified situations. One of the most important statistical models in medical research is the proportional hazards model of survival analysis. This study was therefore designed to investigate the underlying one-month survival of RTA victims in a level 1 trauma center in Iran with the viewpoint of post-crash care-provider using parametric and semi-parametric survival analyses models in 2017. **Method:** This retrospective cohort study restudy was conducted at Level-I Trauma Center of Shiraz between January and December 2017. Considering the fact that certain covariates acting on survival may take a non-homogenous risk pattern which leads to the violation of proportional hazards assumption in Cox-PH, we considered parametric survival modeling in order to inspect the multiplicative effect of all covariates on hazard. Distributions of choice were Exponential, Weibull and Lognormal. For each of the fitted models, estimates of the parameters, as well as the Akaike (AIC), were recorded. **Results:** Survival analysis was conducted on 8621 subjects for whom length of stay was between 1 and 89 days (observation period) with 141 events (deaths). The long rank test revealed inequality of survival functions across various categories of age, injury mechanism, injured body region, ISS and nosocomially infected individuals. Although the risk level in the Cox model is almost the same as the results of the parametric models, but according to the Akaike criterion, the Weibull model in the multivariate analysis has better results. Thus, the results of the fitting index of the AIC model indicate that Weibull's parametric model is better than other functions. **Conclusion:** In multivariate analysis, parametric models were more efficient than other models. The results are similar and in some results were similar for both parametric and semi-parametric models, but in general parametric models were more efficient and among them the Weibull model seemed more suitable.

کلمات کلیدی:

Road Traffic Accidents, Semi-Parametric, parametric, Survival models

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