# Quantile Residual Life Regression Based on Semi-Competing Risks Data

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**Abstract:** This paper investigates the quantile residual life regression based on semi-competing risk data. Because the terminal event time dependently censors the non-terminal event time, the inference on the non-terminal event time is not available without extra assumption. Therefore, we assume that the non-terminal event time and the terminal event time follow an Archimedean copula. Then, we apply the inverse probability weight technique to construct an estimating equation of quantile residual life regression coefficients. But, the estimating equation may not be continuous in coefficients. Thus, we apply the generalized solution approach to overcome this problem. Since the variance estimation of the proposed estimator is difficult to obtain, we use the bootstrap resampling method to estimate it. From simulations, it shows the performance of the proposed method is well. Finally, we analyze the Bone Marrow Transplant data for illustration.