PRESENTING SURVIVAL DATA WHEN GROUP ASSIGNMENT IS TIME-DEPENDENT

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Describing and comparing survival of two or more groups of patients is the goal of many medical studies. Typical outcomes analyzed include overall survival and disease-free survival which are subject to censoring. Traditional Kaplan–Meier curves and log-rank test are appropriate tools to describe and compare survival experience of the patients when their group assignment is known at the start of the study and does not change with time. However, it is often of interest to compare the groups of patients where the group assignment is made after the study started. In this case, all patients start the study as one group and their differentiation occurs later dependent on the event which could be experienced by some of them as time progresses. Special analysis methods have to be employed to accommodate patient’s status evolution in time. The incorrect approach where such a covariate is treated as known at baseline leads to time-dependent bias in estimation of the quantities of interest such as risk of death after an intermediate event. We will showcase simple summary measures which could be used to describe patients’ survival experience in case of time-dependent group assignment.