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Imputation and Censored Covariate: Application to Alzheimer Study

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The association between maternal age of onset of dementia and beta-amyloid deposition (measured by *in vivo* PET imaging) in cognitively normal older offspring is of interest. In a regression model for beta-amyloid, special methods are required due to the random right censoring of the covariate of maternal age of onset of dementia. Prior literature has proposed methods to address the problem of censoring due to assay limit of detection, but not random censoring. We propose imputation methods and a survival regression method that do not require parametric assumptions about the distribution of the censored covariate. Existing imputation methods address missing covariates, but not right censored covariates. In simulation studies, we compare these methods to the simple, but inefficient complete case analysis, and to thresholding approaches. We apply the methods to the Alzheimer's study.

Biography

Folefac Atem, PhD, MS is a Biostatistician. Dr. Atem is an Assistant Professor in the Department of Biostatistics at the University of Texas Health Science Center at Houston. His office is located at UT Southwestern medical school. He completed his PhD from the University of Pittsburgh in 2010 and Postdoc at Harvard in 2014.

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