

EVALUATION OF MULTIPLE OUTCOMES FROM A COHORT OF EPILEPTIC PATIENTS: MODELING APPROACHES

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In epidemiological cohort studies in which there are many important primary outcomes, epidemiologic analysis often examine multiple associations between outcomes and explanatory covariates or risk factors in separate univariate analysis, as if each were the only primary outcome of interest in the study. This analytical approach is unsatisfactory for the following reasons; a) - multiple responses from the same individual are often correlated so it may be inefficient to treat each analysis as if it has been conducted in a separate groups of patients, b) - this approach is unable to answer questions concerning relationship among the outcomes such as similarities and differences in risk factors for the multiple outcomes and c)- it has the problem of multiplicity of the significant testing and confidence interval construction.

Data from the cohort of epileptic patients who had been followed up for five years were obtained. For the group of patient's three equally important outcome variables; developmental retardation, neurological abnormality and one year seizure free period at the age of five were determined on all patients with additional data as covariates. Important risk factors for the three outcomes variables were examined separately by regression models in a binary responses and it is shown the inadequacy of the approach then several multivariate modeling of data are examined and compared and finally findings were discussed in term of what it means for the patients.