

Building a Multidisciplinary Bridge Across the Quality Chasm in Thoracic Oncology

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Statistical Methods (Supplemental)

The study was designed with overall survival as the primary endpoint. The design provided 80% power, with alpha of 0.05, to detect a hazard ratio of 1.25 between patients receiving multidisciplinary care and serial care. We targeted enrollment of 150 patients on the multidisciplinary arm and 300 patients on the serial care arm, matched by clinical stage (based on the initial diagnostic CT scan), performance status, insurance status, race, and age range. After initiation of the study, it was determined that the individual 1:2 matching strategy was not attaining high level matches within the allotted parallel time frame for the required number of subjects. To accommodate this change the following revisions were made to the statistical methodology. A frequency matching strategy was used based on the matching variables (age, sex, and histology were controlled for as a model covariate for better numerical efficiency). Crude comparisons between groups were made using standard univariate two sample methods. Comparative analyses were then conducted using matching variables as strata, per original design, with the strata now allowing multiple cases and controls per match group (frequency matching). Specifically, analyses were designed based on conditional logistic regression for each binary endpoint and stratified cox proportional hazards models for survival endpoints. Models were further adjusted to include age, sex, and histology in addition to the adjustment for strata described above. For each outcome, additional statistical models were evaluated controlling for matching variables as covariates in unconditional analyses. All analyses were conducted in SAS Version 9.4 (Cary, NC) with a type-I error rate of 0.05.