

Identifying Factors Associated with Poor Genitourinary Cancer Clinical Trial Accrual Using a Novel Data Extraction Algorithm

Kristian Stensland, MD MPH; Alireza Moinzadeh, MD

INTRODUCTION: Poor accrual to cancer clinical trials is the most frequently cited barrier to efficient trial completion, yet information regarding accrual adequacy is limited. Comparisons of planned (or anticipated) accrual to actual accrual have previously been limited by siloed information. Even ClinicalTrials.gov presents only one type of accrual (actual OR anticipated) for each trial. We developed a novel approach to extracting both anticipated and actual accrual for clinical trials. We apply these new data to describe accrual adequacy and identify predictors of poor trial accrual using data previously unavailable on this scale.

METHODS: Records for all genitourinary cancer clinical trials started since 2005 were extracted from ClinicalTrials.gov. We employed a custom Python web scraper to extract anticipated and actual accrual information and other trial characteristics from the ClinicalTrials.gov archives. Logistic regression was used to identify predictors of failing to meet 50% or 85% of anticipated accrual.

RESULTS: A total of 3,976 completed or terminated genitourinary cancer trials were extracted, of which 1,322 unique trials had complete records. Only 42% of trials met their anticipated accrual goals, and 30% enrolled fewer than half of their anticipated patients (Table 1). Of trials reported as completed, only 54% reached their anticipated accrual goals; 17% failed to reach 50% of anticipated accrual. On logistic regression, prostate (OR 0.64, 95% CI 0.45-0.91) and testicular (OR 0.44, 95% CI 0.18-0.96) trials, as well as trials with sites within and outside the USA (OR 0.55, 95% CI 0.35-0.86) were more likely to accrue >50% of anticipated patients.

CONCLUSIONS: Genitourinary cancer clinical trials frequently fail to meet anticipated accrual goals. Whether this represents overly ambitious goals or modified endpoints after a trial opens remains uncertain. This information should be transparent and applied to the interpretation of results. Future work in this regard should be used to aid in planning clinical trials.

Table 1: Percentage of Goal Accrual Attained in GU Cancer Trials

Percent of Goal Accrual Attained in GU Cancer Trials			
Cancer Type	< 50% accrued	50-85% accrued	>85% accrued
Bladder	54 (36.7%)	30 (20.4%)	63 (42.9%)
Kidney	127 (34.0%)	79 (21.2%)	167 (44.8%)
Prostate	224 (28.9%)	141 (18.2%)	411 (53.0%)
Testis	8 (30.8%)	4 (15.4%)	14 (53.8%)