Einladung zum Biometrischen Kolloquium

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COMPARATIVE SAFETY AND EFFECTIVENESS OF OSTEOPOROSIS DRUGS: A MULTI-CENTER OBSERVATIONAL COHORT STUDY CONDUCTED THROUGH THE OHDSI NETWORK

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Abstract:

Prevailing clinical wisdom favors the bisphosphonate alendronate over selective estrogen modulator receptors such as raloxifene as first-line pharmacologic therapy for osteoporosis treatment. However, comparative effectiveness evidence for osteoporosis drugs remains insufficient. Through the Observational Health Data Sciences and Informatics (OHDSI) research network, we conduct a multi-center observational study comparing alendronate and raloxifene in nine data sources that include electronic medical records and insurance claims. Data partners execute identical study protocols and share only study results and not patient level information.

We control for measured confounding using propensity score trimming and stratification in a survival outcome model. We use an expansive propensity score model and utilize L1 regularization for model fitting. We account for unmeasured confounding using negative control outcomes to estimate and adjust for residual systematic bias. Our results show raloxifene users have a similar hip fracture risk, slightly decreased vertebral fracture risk, and fewer adverse atypical femoral fractures as compared with alendronate users. We demonstrate substantial control of measured confounding by propensity score adjustment, and low residual systematic bias through negative control experiments, lending credibility to our effect estimates.