estimates of the effects of individual AEs on mortality. Multiple PS may be used more often if no information needed to predict outcomes is lost from sub-sampling.

SB3

COMPARISON OF DIFFERENT PROPENSITY SCORE MATCHING METHODS IN ELDERLY ANTIPSYCHOTIC USERS

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OBJECTIVES: Various propensity score matching techniques are used in observational studies to reduce selection and confounding bias. The purpose of this study was to evaluate the most popularly used matching methods namely Mahalanobis metric matching within calipers of propensity scores, caliper matching with and without replacement and greedy matching for making elderly antipsychotic users comparable. METHODS: IMS LifeLink™ Claims were utilized to identify elderly patients using atypical and typical antipsychotics. Eighty covariates including demographics, hospitalization, co-morbidities and co-medications were used to match typical and atypical antipsychotic users using propensity scores matching. Propensity matching methods were evaluated on the basis of following criteria: (1) Number of variables which remains significant after matching using t-test and chi-squares; (2) Percentage bias reduction for the variables which remained significant after matching; (3) Mean difference in propensity scores as a percentage of average standard deviation (SD); and (4) Density estimates of the propensity scores of the two groups using the Kolmogorov-Smirnov test. RESULTS: The four matching methods reduced bias by making two groups comparable. However greedy matching yielded the best results when the four criteria were applied. Only 5 explanatory variables remained significant after greedy matching compared to 36, 43 and 9 with Mahalanobis metric matching, and caliper matching with and without replacement, respectively. More than 90% bias reduction was obtained through all the matching methods. Mean difference as a percentage of the average SD was 0% with greedy and caliper matching with replacement and these were the only techniques that produced propensity scores densities with insignificant differences. CONCLUSIONS: The greedy matching technique was found to be efficient in matching different classes of antipsychotic users. Although the efficiency of matching methods could differ based on the study sample and availability of covariates, a priori criteria can be useful in selecting the most appropriate matching technique.

SB4

DEALING WITH SELECTION BIAS IN NONLINEAR SETTINGS: A CASE OF COMPARATIVE EFFECTIVENESS OF STATIN PLUS FIBRATE COMBINATION THERAPY VERSUS STATIN MONOTHERAPY IN TYPE II DIABETES

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OBJECTIVES: To estimate the effectiveness of statin+fibrate combination-therapy versus statin-monotherapy on cardiovascular disease(CVD) occurrence in subjects with type II diabetes in a managed care setting using appropriate econometric models dealing with selection bias in nonlinear settings. METHODS: Combination-therapy group and monotherapy-group were identified among subjects with type II diabetes with two-years intake period(7/1/2002-6/30/2004) and three-years follow-up using administrative claims from a US health plan covering four million lives. Outcome measure was CVD occurrence. A univariate-probit model was developed to evaluate adjustment for factors other than group assignment. We used propensity score(Ps) and instrumental variable(IV) method. To deal with nonlinear outcomes, we built two-stage-probit model with IV method using two-stage-residual-inclusion estimation. We used physician prescribing preference as the instrument. To test the validity of the instrument, we tested for the correlation between the instrument and treatment indicator using standard t-test. To check whether it is valid to exclude the instrument from the main equation, Wald-test was performed. Stock-Yogo test was used to check the weak instrument issue. To test the endogeneity of treatment indicator, we performed Hausman-test. RESULTS: Adjusting for age, gender, prior-CVD, CVD-related pharmacy-costs, EliLilacouse morbidity, and diabetes with complications, combination-therapy-group experienced 9.1% less CVD compared with statin-monotherapy group. For each additional year of no TR launch. Similarly, among nonbenzodiazepines, early launch of TR brands had significantly less erosion of the total brand than those with TR launch less than one year or no TR launch. Similarly, among nonbenzodiazepines, early launch of TR