

Exploring Relative Mortality and Epoetin Alfa (EPO) Dose Among Hemodialysis Patients

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A number of recently published papers have studied the link between mortality, hemoglobin and Epoetin Alfa (EPO) dose in hemodialysis patient populations using observational data. None of these studies have attempted to consider EPO measured repeatedly over time whilst simultaneously adjusting for the time dependent confounder hemoglobin. This problem occurs frequently with observational databases in naturalized settings. It also occurs in randomized studies where the patients are only randomized to treatment at baseline, allowing subsequent titration of dose based on hemoglobin. Marginal Structural Models (MSM) have recently been designed, using Inverse Probability of Treatment Weights (IPTW), to adjust for this type of confounding. Under the assumptions of no unmeasured confounding and model misspecification, the parameter estimates from the MSM have causal interpretations. Here we apply MSM to continuous EPO dose and compare it with the traditional time dependent Cox PH model results.

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