KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Oral
Abstract Submission No. : OR-1355

Non-Racial Predisposition to Pretransplant Medical Arterial Calcification Among Kidney Transplant Candidates: A Propensity Score Weighting Analysis

Ekamol Tantisattamo[1], Busara Songtanin[2], Sakditad Saowapa[3], Chawit Lopimpisuth[2], Natnicha Leelaviwat[3], Natchaya Polpichai[4], Possawat Vutthikraivit[5]
[1]Department of Division of Nephrology, Hypertension, and Kidney Transplantation, Department of Medicine, University of California Irvine School of Medicine, United States
[2]Department of Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand
[3]Department of Faculty of Medicine Ramathibodi Hospital, Mahidol University, United States
[4]Department of Faculty of Medicine Songklanagarin Hospital, Prince of Songkla University, Thailand
[5]Department of Phramongkutklao College of Medicine, Mahidol University, Thailand

Objectives: Medial arterial calcification (MAC) is associated with poorer renal function and higher mortality in CKD and ESRD. In addition, aging and diabetes mellitus are known to be associated with MAC. White population is associated with a severe form of vascular calcification such as calciphylaxis. Association between racial difference and MAC is unknown.

Methods: Since breast arterial calcification is exclusively medial, mammogram (MG) was used to determine MAC. Female renal transplant recipients (RTR) with MG during pretransplant period was divided into white and non-white groups. Baseline characteristics including potential confounders were balanced by propensity score weighting (PSW). Association between race and MAC during pretransplant period is examined by multiple logistic regression analysis.

Results: Of 51 RTR, mean age±SD was 57±10.5 years old and 23 (45%) patients were non-white. Non-white group had a higher proportion of diabetes compared to white group (13 (57%) vs. 8 (29%) patients, p 0.044). Among patients who were on either HD or PD, median duration of dialysis prior to kidney transplantation (KT) were 4.05 (1.4 to 20.4) and 3.43 (0.7 to 5.3) years, respectively (p 0.0617). Up to 10 out of 23 non-white patients had MAC; whereas only 10 out of 28 white patients had MAC (43.5% vs. 35.7%, p 0.572). By using generalized boosted modeling-based PSW to balance for age, cause of kidney diseases, dialysis modalities, pretransplant obesity status, diabetes, serum albumin, and corrected serum calcium, non-white group had 7.4 times higher the odds of having MAC compared to white group, but the association was not significant (OR 7.42; 95%CI 0.5930 to 92.9480).

Conclusions: Race is not an independent risk factor for MAC. Since calciphylaxis involves in intimal layer of small-medium sized vessels; whereas, MAC affects medial layer of the arteries, risk factors particularly racial predisposition likely be different between calciphylaxis and MAC.

Figure 1

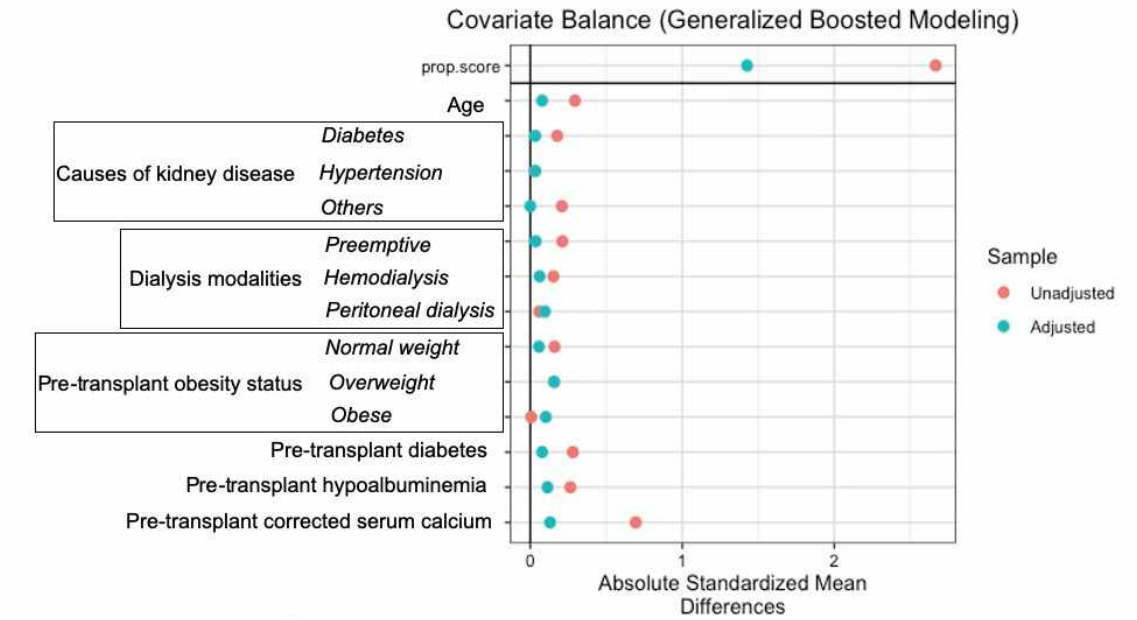

Figure 1: Love plot estimating propensity score weights using generalized boosted modeling with balancing covariates
* "* indicates variables for which the displayed value is the raw (unstandardized) difference in means."

Figure 2

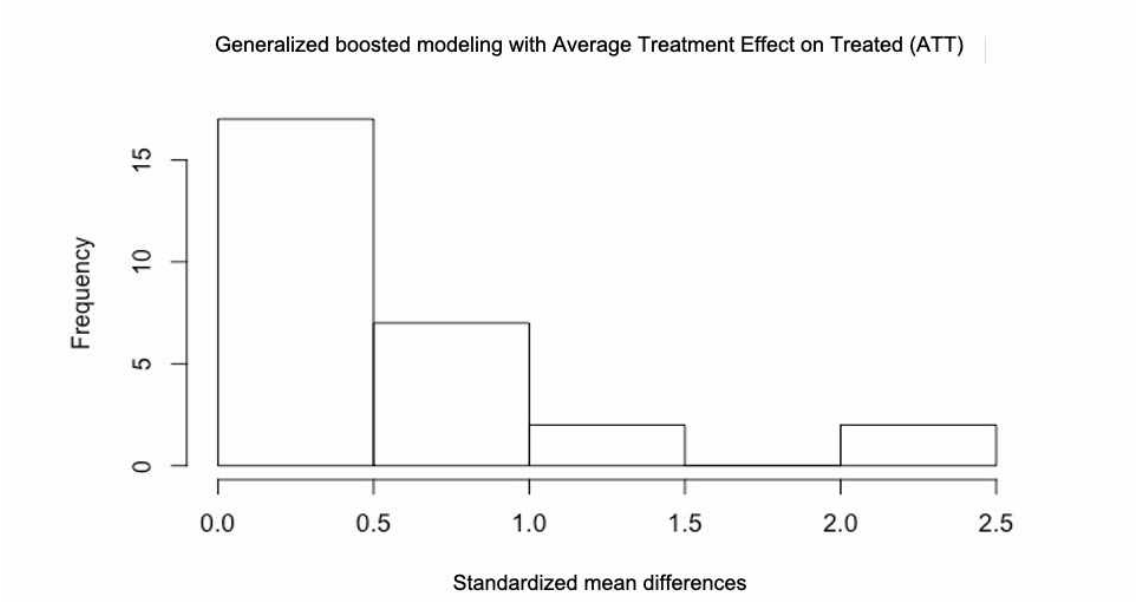

Figure 2: Histogram of estimated propensity score weights using generalized boosted modeling with balancing covariates