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CKD & associated complications

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Statin therapy is more effective in early stage of chronic kidney disease patients

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Background: Chronic kidney disease (CKD) is a major risk factor for the development of cardiovascular disease (CVD). Statin treatment is known as one of options to reduce the risk of CVD. However, it is still uncertain if statin treatment affects the renal progression and outcomes in CKD patients. The aim of this study was to determine the effect of statin treatment in CKD patients on clinical outcomes.

Methods: We retrospectively reviewed CKD patients who visited to Gachon University Gil Medical Center with renal problems from 2003 to 2013. From a total 14497 CKD patients, 858 statin users were paired with 1:1 with non-users for analysis using propensity score matching. The primary outcome was renal progression including doubling of serum creatinine and renal death. Secondary outcome was the all-cause mortality. We also analyzed the data from stratification to find out the interactive factors for composite outcomes (creatinine doubling, renal death and all-cause mortality).

Results: Statin was prescribed for 13.5% of study subjects. Statin treatment associated hazard ratios (HRs) [95% confidence intervals (CIs)] for the doubling of serum creatinine levels was significant only in patients with eGFR (estimated glomerular filtration rate) ≥ 30 ml/min/1.73m² were 0.744 (0.635 - 0.873) in the unmatched cohort and 0.767 (0.596 - 0.986) in the matched cohort. In analyses for secondary outcomes, HRs (95% CIs) for all-cause mortality were 0.655 (0.502 - 0.855) in the unmatched cohort and 0.537 (0.297 - 0.973) in the matched cohort. The HRs (95% CIs) for composite outcomes among those with and without eGFR ≥ 30 ml/min/1.73m² were 0.764 (0.613 - 0.952) and 1.232 (0.894 - 1.697), respectively (P for interaction, 0.017).

Conclusion: These results suggest that statin treatment in early stages of CKD patients may useful related to renal progression and all-cause mortality. Further evaluation is needed to find out if early administration of statins in CKD patients improves the outcomes.

Keywords: Chronic Kidney Disease, Outcomes, Statin