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Statin initiation and all-cause mortality in incident statin-naïve dialysis patients

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Objectives: Cardiovascular disease is the main cause of death in end-stage renal disease (ESRD) patients. Current guidelines recommend the use of statin in non-dialytic chronic kidney disease patients due to its well-established cardiovascular protective effect. However, it remains controversial whether statin-naïve ESRD patients should start statin or not because of lacking evidence.

Methods: We analyzed incident dialysis patients in claim data from National Health Insurance Service of Korea from 2010 to 2017. Patients who were under-aged, had previous cardiovascular events, or had administered statins before dialysis were excluded. The study group included dialysis patients receiving statins within 1 year after dialysis initiation. The control group were extracted after propensity score matching. The main outcome was the composite risk of major cardiovascular events (MACE) or all-cause mortality.

Results: We included 1596 patients starting statin within the 1st year of dialysis initiation and 17,461 patients without initiating statins. Baseline characteristics was significantly different between the two groups, but after matching these differences disappeared. During 9438 person-year follow-up, we identified 203 (42.7/1,000 person-years) and 265 (56.6/1,000 person-years) all-cause death in the study and control groups, respectively. Patients taking statin revealed lower risk of mortality (aHR 0.72, 95%CI 0.60–0.87, p=0.001). In terms of MACE, 138 (29.0/1,000 person-years) and 126 (26.9/1,000 person-years). MACE events were developed in the study and control groups, respectively. Statin initiation did not lower incident MACE events in dialysis patients. Interestingly, only the patients prescribed statins with the recommended dosage by the KDIGO guideline got a benefit of mortality risk reduction (aHR 0.55, 95%CI 0.40–0.75, p<0.001). The risk of hemorrhagic stroke which was concerned as one of the side effect of statin treatment in ESRD patients was not different between the groups.

Conclusions: Starting statin prescription within the early period from dialysis initiation may be of benefit in reducing all-cause mortality in statin-naive ESRD patients.