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The effect of aspirin on preventing primary vascular access dysfunction in the incident hemodialysis patients

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Objectives:

Aspirin has been often prescribed empirically to improve the patency of hemodialysis (HD) vascular access. The aim of this study was to investigate the impact of aspirin on the survival of vascular access in incident HD patients with arteriovenous fistula (AVF) or graft (AVG).

Methods: A prospective cohort of 881 incident HD patients between 2009 and 2015 were enrolled. The primary outcome was defined as the first AVF/AVG intervention or salvage procedure, including percutaneous transluminal angioplasty or surgery for vascular access failure. Moreover, Cox analyses were performed to determine the association between aspirin usage and occurrence of primary outcome.

Results: The mean age of patients was 57.9 ± 13.4 years, and 63.8% of the patients were male. Aspirin was prescribed in 241 (27.4%) patients. During a median follow-up duration of 30 months, 180 (20.4%) patients experienced primary outcome event. In univariate analysis, older age, female, the presence of diabetes mellitus (DM), preexisting peripheral arterial disease, and AVG (vs. AVF) were significantly associated with the development of primary outcome. However, aspirin usage from the baseline was not significantly associated with primary outcome events (HR: 1.16; 95% CI: 0.84-1.60; $p = 0.378$). In multivariate analysis, female, the presence of DM, and AVG were still significantly associated with the occurrence of primary outcome. Moreover, we could not find the protective effect of taking aspirin on the primary vascular access failure even in the subgroup analyses stratified according to gender, the presence of DM, and the type of vascular access.

Conclusions: Physicians need to take careful consideration when they choose aspirin to prevent primary vascular access failure in the Korean incident HD patients. In the future, larger interventional prospective study will be needed to elucidate the effect of aspirin on the vascular access failure.