

Angiotensin converting enzyme inhibitor (ACE-I), angiotensin receptor blocker (ARB), and calcium channel blocker (CCB) are known for their antihypertensive and cardio-protective effects, however, their effects on long-term vascular access patency are still inconclusive” Chen et al (2016).

Abstract:

BACKGROUND: Vascular access failure is a huge burden for patients undergoing hemodialysis. Many efforts have been made to maintain vascular access patency, including pharmacotherapy. Angiotensin converting enzyme inhibitor (ACE-I), angiotensin receptor blocker (ARB), and calcium channel blocker (CCB) are known for their antihypertensive and cardio-protective effects, however, their effects on long-term vascular access patency are still inconclusive.

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DESIGN, SETTING, PARTICIPANTS AND MEASUREMENTS: We retrospectively enrolled patients commencing maintenance hemodialysis between January 1, 2000, and December 31, 2006 by using National Health Insurance Research Database in Taiwan. Primary patency was defined as the date of first arteriovenous fistula (AVF) or arteriovenous graft (AVG) creation to the time of access thrombosis or any intervention aimed to maintain or re-establish vascular access patency. Cox proportional hazards models were used to adjust the influences of patient characteristics, co-morbidities and medications.

RESULTS: Total 42244 patients were enrolled in this study, 37771 (89.4%) used AVF, 4473 (10.6%) used AVG as their first long term dialysis access. ACE-I, ARB, and CCB use were all associated with prolonged primary patency of AVF and AVG (HR 0.557, CI 0.482-0.643 for ACE-I use, HR 0.536, CI 0.467-0.614 for ARB use, HR 0.482, CI 0.442-0.526 for CCB use).

CONCLUSIONS: In our analysis, ACE-I, ARB, and CCB were strongly associated with

prolonged primary patency of both AVF and AVG. Further prospective randomized studies are still warranted to prove the causality.

Reference:

Chen, F.A., Chien, C.C., Chen, Y.W., Wu, Y.T. and Lin, C.C. (2016) Angiotensin Converting-Enzyme Inhibitors, Angiotensin Receptor Blockers, and Calcium Channel Blockers Are Associated with Prolonged Vascular Access Patency in Uremic Patients Undergoing Hemodialysis. PLoS One. 11(11), p.e0166362. eCollection 2016.

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