

# Angiotensin-converting enzyme inhibitors and risk of age-related macular degeneration in individuals with hypertension

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January 5, 2022

## Abstract

Several observational studies have examined the potential protective effect of angiotensin-converting enzyme inhibitor (ACE-I) use on the risk of age-related macular degeneration (AMD) and have reported contradictory results owing to confounding and time-related biases. We aimed to assess the risk of AMD in a base cohort of patients aged 40 and above with hypertension among new users of ACE-I compared to an active comparator cohort of new users of calcium channel blockers (CCB) using data obtained from IQVIA Medical Research database, a primary care database in the UK. In this study, 53,832 and 43,106 new users of ACE-I and CCB were included between 1995 and 2019, respectively. In an on-treatment analysis, patients were followed up from the time of index drug initiation to the date of AMD diagnosis, loss to follow-up, discontinuation or switch to the comparator drug. A comprehensive range of covariates were used to estimate propensity scores to weight and match new users of ACE-I and CCB. Standardized mortality ratio (SMR) weighted Cox proportional hazards model was used to estimate hazard ratios (HRs) of developing AMD. During a median follow-up of 2 years (interquartile range 1-5 years), the incidence rate of AMD was 2.4 and 2.2 per 1,000 person-years among the weighted new users of ACE-I and CCB, respectively. There was no association of ACE-I use on the risk of AMD compared to CCB use in either the propensity score weighted or matched, on-treatment analysis (aHR: 1.07 (95% CI 0.90-1.27) and 0.87 (0.71-1.07) respectively).

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