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## Angiotensin-converting enzyme inhibitors and angiotensin receptor blockers in high vascular risk

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### Abstract

**Objective** ACE inhibitors (ACEIs) and angiotensin receptor blockers (ARBs) are widely prescribed in patients with high cardiovascular (CV) risk. However, whether both classes have equivalent effectiveness to prevent CV events remains unclear. The aim of this study was to compare the incidence of major CV events between ACEI and ARB users.

**Methods** The Reduction of Atherothrombosis for Continued Health registry is an observational study who enrolled 69 055 individuals with high CV risk. Among them, 40 625 patients (ACEIs 67.9% and ARBs 32.1%) were included. Main outcome was rates of CV mortality, non-fatal myocardial infarction, non-fatal stroke or hospitalisation for CV disease at 4 years.

**Results** In a propensity score-adjusted cohort, the incidence of the primary outcome was lower in patients on ARBs compared with ACEIs (29.2% vs 33.4%; adjusted HR 0.90; 95% CI 0.86 to 0.95;  $p < 0.001$ ). Similar results were observed for CV (6.9% vs 8.2%; HR 0.83; 95% CI 0.75 to 0.93;  $p = 0.001$ ) and all-cause mortality (11.6% vs 12.6%; HR 0.89; 95% CI 0.82 to 0.97;  $p = 0.005$ ). Analyses using propensity score matching yielded similar results. History of diabetes or estimated glomerular filtration rate did not affect the results. ARB use was associated with lower rates of all-cause mortality in secondary prevention but not in primary prevention patients ( $p$ -value for interaction=0.03).

**Conclusion** ARB use appears to be associated with 10% lower rates of CV events compared with ACEIs, especially in patients with established CV disease. Our results suggest that ARBs may provide superior protection against CV events than ACEIs in high-risk patients in real-world practice.

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### Footnotes

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