Therapy, Pharmacoeconomics and Pharmacovigilance

11.9 Differences between ACE Inhibitor and Angiotensin II Receptor Blocker-based therapy in preventing myocardial infarction, stroke and cardiovascular mortality: a meta-analysis.

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Introduction. To compare the effects of angiotensin II receptor blockers (ARBs) and angiotensin converting enzyme inhibitors (ACEIs) on the risk of myocardial infarction (MI), stroke, cardiovascular mortality and total mortality.

Methods. We conducted a meta-analysis of randomised comparative trials between ARBs and ACEIs. Inclusion criteria were publication in peer-reviewed journals indexed in Medline, randomised comparison ARBs vs. ACEIs, or ARBs+ACEIs vs. ACEIs, report of major complications including MI, stroke, cardiovascular mortality or all-cause mortality; average follow-up of at least 1 year in at least 200 patients.

Results. Six trials fulfilled the inclusion criteria, for a total of 49924 patients. In the pooled estimate, there were no significant differences between ARBs and ACEIs on the risk of MI (OR 1.01; 95% CI 0.95-1.07; $p=0.75$), cardiovascular mortality (OR 1.03; 95% CI 0.98 - 1.08; $p=0.23$) and total mortality (OR 1.03; 95% CI 0.97-1.10; $p=0.20$). This was the case also when the analysis involved only the comparison between ACEIs and ARBs. Overall, the risk of stroke was slightly lower with ARBs than ACEIs (OR 0.92; 95% CI 0.85-0.99; $p=0.037$), the direct ACEIs and ARBs comparison showing a non-significant trend in a similar direction. Statistical heterogeneity among trials was not significant, with a low to null inconsistency statistic, for stroke ($p=0.67$), MI ($p=0.86$), cardiovascular mortality ($p=0.14$) and total mortality ($p=0.12$).

Conclusions. This overview suggests that ARBs are as effective as ACEIs on the risk of MI, cardiovascular mortality and total mortality. ARBs may be slightly more protective than ACEIs on the risk of stroke.