The impact of angiotensin-converting enzyme inhibitors on lung cancer and non-lung cancers compared with angiotensin II receptor blockers

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Abstract

Aim: Angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) have been reported to manifest controversial relationships with cancer, and recent focus concerning the tumorigenic effect of ACEIs mainly falls on lung cancer. We compared ACEIs with ARBs for their impact on the risk and prognosis of lung cancer and non-lung cancers, respectively. *Methods:* A meta-analysis was performed to explore the impact of ACEIs on the risk of lung cancer and non-lung cancers, while a systematic review was performed to further analyze ACEIs' influence on the prognosis of lung cancer. Terms concerning ACEIs and cancer were searched, and 10 cohort studies were included for risk analysis, while 5 cohort studies were included for analyzing the prognosis of lung cancer. *Results:* Initial pooled result revealed that ACEIs prescription is associated with an observed increase on the risk of lung cancer (RR 1.28, 95% CI 1.02-1.61), colorectal cancer (RR 1.46, 95% CI 1.13-1.87) and hepatic cancer (RR 2.00, 95% CI 1.01-3.94) when compared with ARBs, but further sensitivity analyses suggested the results unsolid, thus neither the development of lung cancer nor non-lung cancers could be proved associated with ACEIs prescription. However, systematic review suggested that ACEIs prescription is associated with an improved lung cancer prognosis. *Conclusion:* There has been no adequate evidence to demonstrate that ACEIs are associated with a higher incidence of lung cancer or non-lung cancers, but an improved prognosis of lung cancer was observed in patients taking ACEIs. Large-scale RCTs are needed and underlying mechanisms need further exploration.

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