

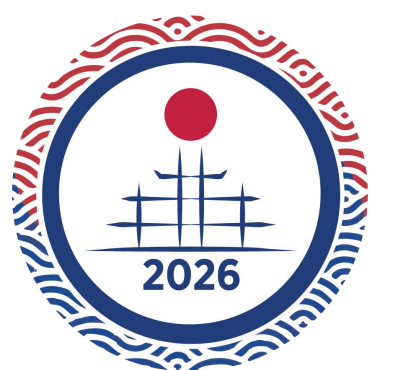


Use of renin-angiotensin system inhibitors and cancer risk: a cohort study of UK Biobank

Dr. Xuyuan Shi¹, Dr. Lunxu Liu¹

¹ Department of Thoracic Surgery and Institute of Thoracic Oncology, West China Hospital, Sichuan University, Chengdu, China

Correspondence: Lunxu_liu@aliyun.com



IASLC 2026 World
Conference on Lung Cancer

SEPTEMBER 12 – 15, 2026
SEOUL, REPUBLIC OF KOREA

INTRODUCTION

Renin–angiotensin system (RAS) inhibitors, including ACEIs and ARBs, are widely prescribed for hypertension. The RAS is involved in biological processes related to carcinogenesis, raising the possibility that RAS inhibition may influence cancer development.

Using data from the UK Biobank, we investigated the associations of ACEI and ARB use with overall and site-specific cancer incidence.

METHODS

Participants receiving antihypertensive treatment without prior invasive cancer (except non-melanoma skin cancer) were identified from the UK Biobank. Individuals with missing covariate data were excluded. Participants were classified as ACEI users, ARB users, or RAS inhibitors non-users. Outcomes included overall cancer incidence and site-specific cancers. Inverse probability of treatment weighting Cox model was applied to estimate hazard ratios (HRs) and 95% confidence intervals (CIs).

DISCUSSION AND CONCLUSION

Actionable Take Away Message

- **RAS inhibitors were not associated with overall cancer risk**, but site-specific associations were observed.
- **ACEI use was associated with lower bladder cancer incidence, whereas ARB use was associated with higher prostate cancer risk**, warranting further investigation.

Future Direction for Research

- Validate these site-specific associations in **larger, more diverse populations** with detailed data on **dose and treatment duration**.
- Further mechanistic studies are needed to clarify how **differential RAS modulation** may influence cancer development and inform individualized antihypertensive therapy.

ACKNOWLEDGEMENTS

Ethics & Disclosures: UK Biobank Application No. 622952; REC 11/NW/0382. Funded by the 1·3·5 Project for Disciplines of Excellence, West China Hospital, Sichuan University (ZYG23010). The authors declare no competing interests. We thank all UK Biobank participants and investigators. ChatGPT (OpenAI) was used for language editing and text condensation; all scientific content was reviewed and approved by the authors.

RESULTS

94,696 participants were followed for a mean of **11.5 years**. After IPTW, baseline characteristics were well balanced across treatment groups.

RAS inhibitor use was **not associated with overall cancer incidence**. However, site-specific associations were observed:

- ACEI use was associated with a **10% lower prostate cancer risk vs ARB** (HR 0.90, 95% CI 0.82–0.99).
- ARB use was associated with a **14% higher prostate cancer risk vs RAS non-users** (HR 1.14, 95% CI 1.02–1.27).
- ACEI use was associated with a **29% lower bladder cancer risk vs RAS non-users** (HR 0.71, 95% CI 0.54–0.93).
- No significant associations were observed for **lung, colorectal, breast, liver, or kidney cancer**.

Sensitivity analyses were generally consistent with the primary findings, although the ACEI–ARB association for prostate cancer was attenuated in some models.

Figure 1. Flow chart of selection of participants for inclusion

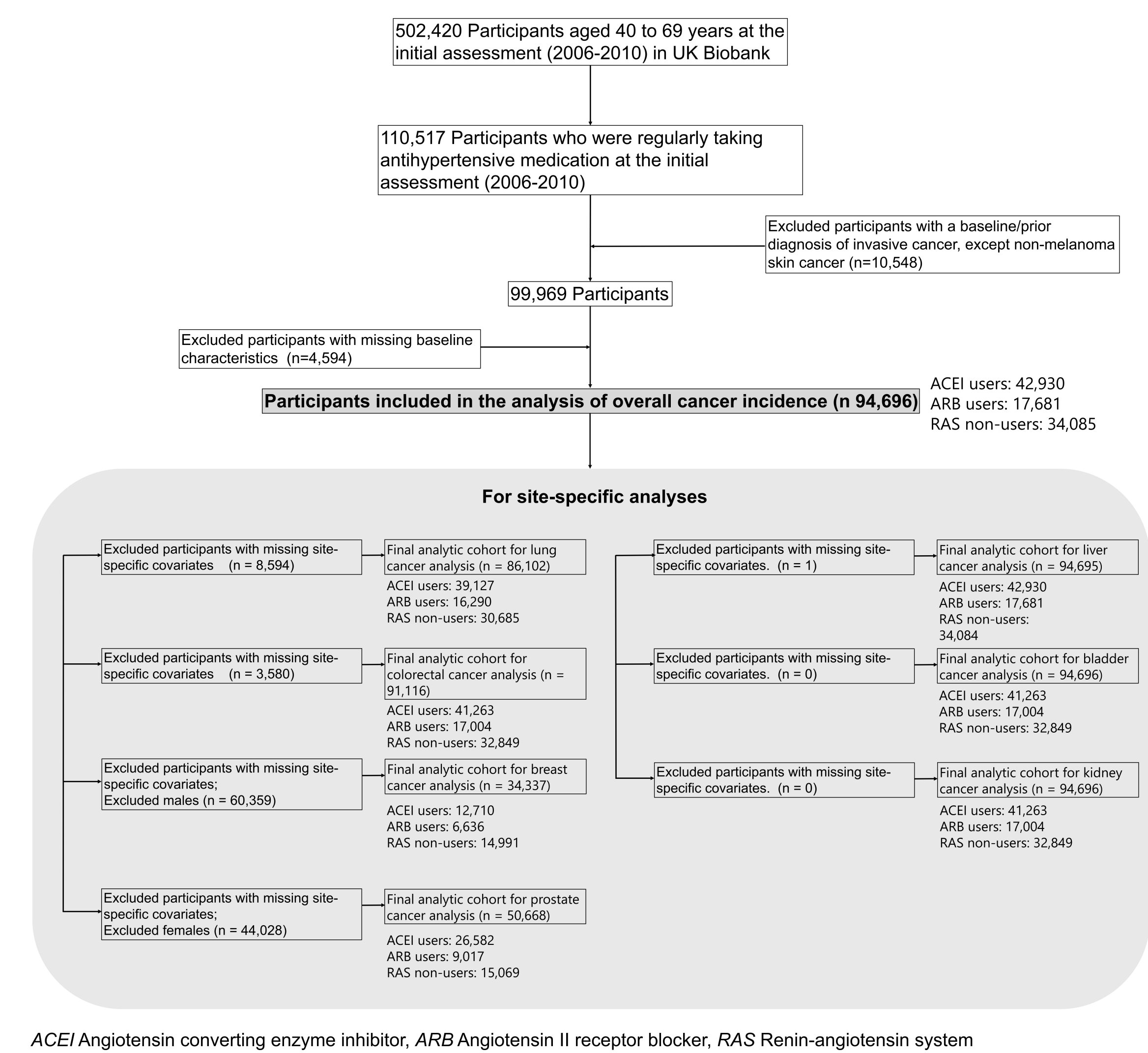


Figure 2. Associations between cancer incidence and antihypertensive medication use

