



Coexisting coronary artery calcification and emphysema on baseline low-dose CT identifies a high-risk cardiopulmonary phenotype in the Croatian National Lung Cancer Screening Program

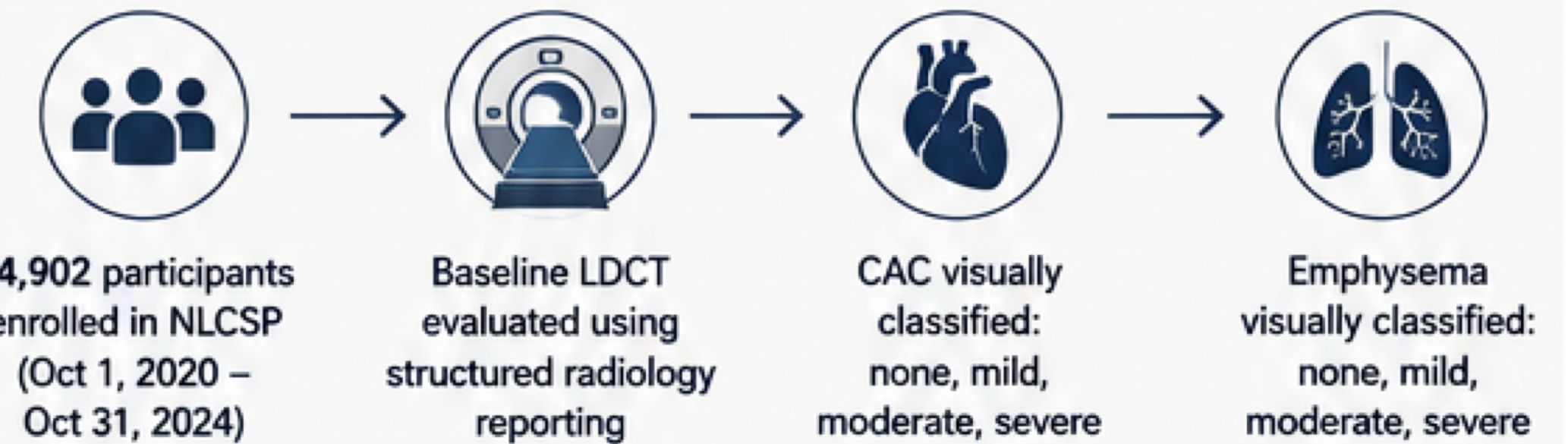
Samaržija M¹, **Krpina K**¹, Aboud A¹, Ylp R², Yankelevitz D², Henschke C²
Department for respiratory diseases, *University Hospital Centre Zagreb, Croatia*¹, Department of Diagnostic, Molecular, and Interventional Radiology, Icahn School of Medicine at Mount Sinai, New York, NY, USA²
Correspondence: Kristina Krpina, krpinakristina@gmail.com



INTRODUCTION

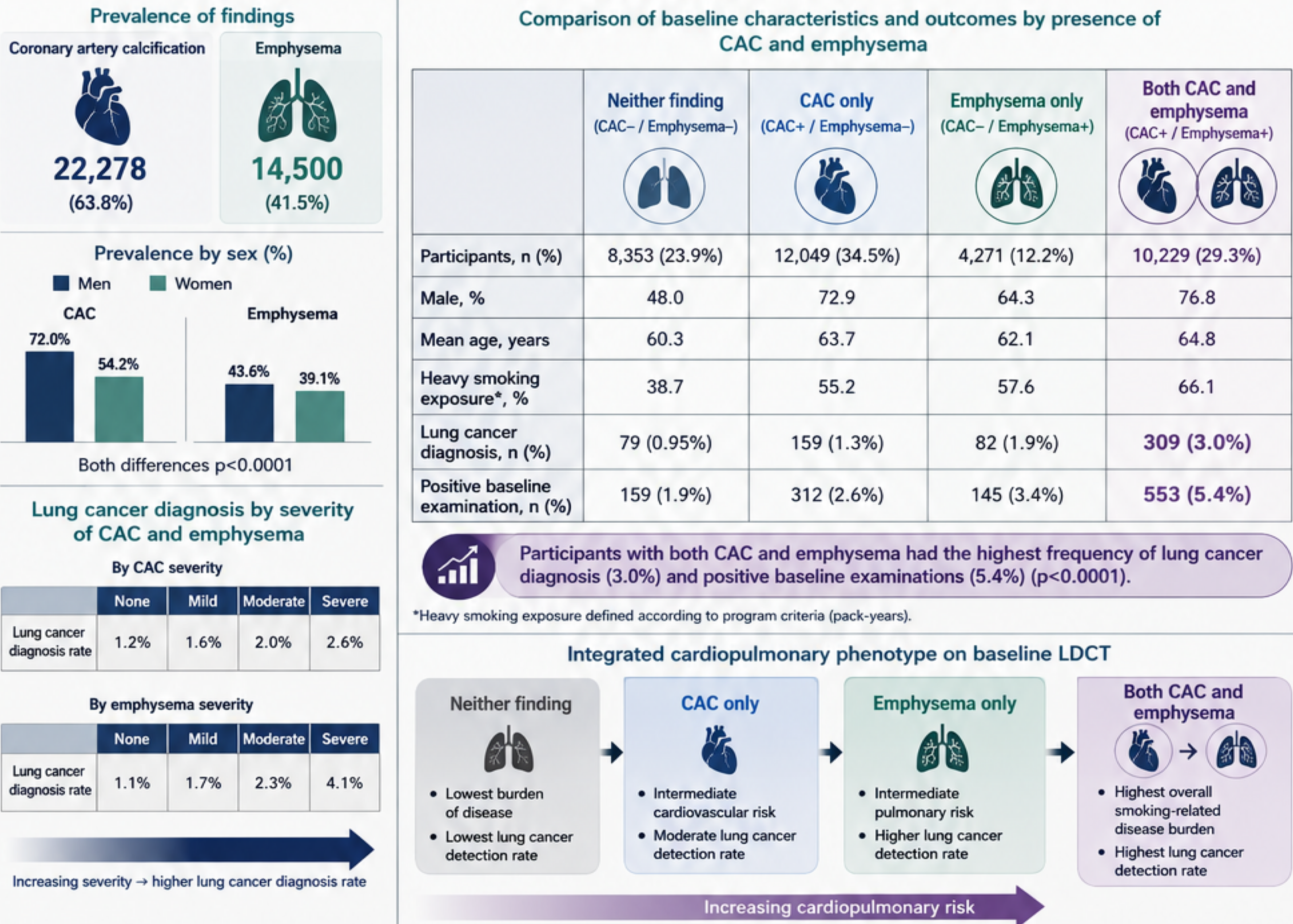
- Low-dose CT (LDCT) screening enables detection of lung cancer and smoking-related comorbidities that significantly contribute to morbidity and mortality.
- Coronary artery calcification (CAC) and emphysema are common in screening-eligible populations.
- Their co-occurrence on LDCT may identify a subgroup with particularly high cardiopulmonary risk.
- This study evaluated the prevalence and clinical correlates of coexisting CAC and emphysema in the Croatian National Lung Cancer Screening Program (NLCSP).

METHODS



- Study period:** Oct 2020–Oct 2024
- Assessment:** Structured LDCT reporting
- CAC & emphysema:** None / mild / moderate / severe
- Groups:** Neither / CAC only / emphysema only / both
- Compared:** Baseline characteristics, smoking exposure, lung cancer diagnosis, positive examinations
- Multivariable analysis:** Adjusted for age, sex, and smoking exposure

RESULTS



CONCLUSION

Baseline LDCT in a nationwide screening program identifies a substantial burden of coexisting CAC and emphysema, supporting the concept of integrated cardiopulmonary phenotyping from a single screening examination. The combined CAC-emphysema phenotype identifies a subgroup with greater overall smoking-related disease burden, including a higher frequency of lung cancer diagnosis and positive baseline screening findings, and may help identify participants who warrant closer preventive follow-up within national screening programs.

REFERENCES & ACKNOWLEDGEMENTS

<https://www.npprakpluca.hr/>