



Characteristics and outcomes of hospitalised patients with cancer and COVID-19: a global prospective cohort study of 800,000 individuals from ISARIC

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Cancer is associated with a higher risk of death among hospitalised patients with COVID-19. Among patients aged 20-30 cancer is associated with a 3-fold increase in risk.

BACKGROUND

Individuals with cancer are at a higher risk of adverse outcomes of SARS-CoV-2 infection, both because of the disease and of immunosuppression due to cancer treatments.

Risks likely vary by cancer type, treatments received, age, and by country and time related to differences in cancer and COVID-19 treatment availability, immunity, and circulating variants.

METHODS

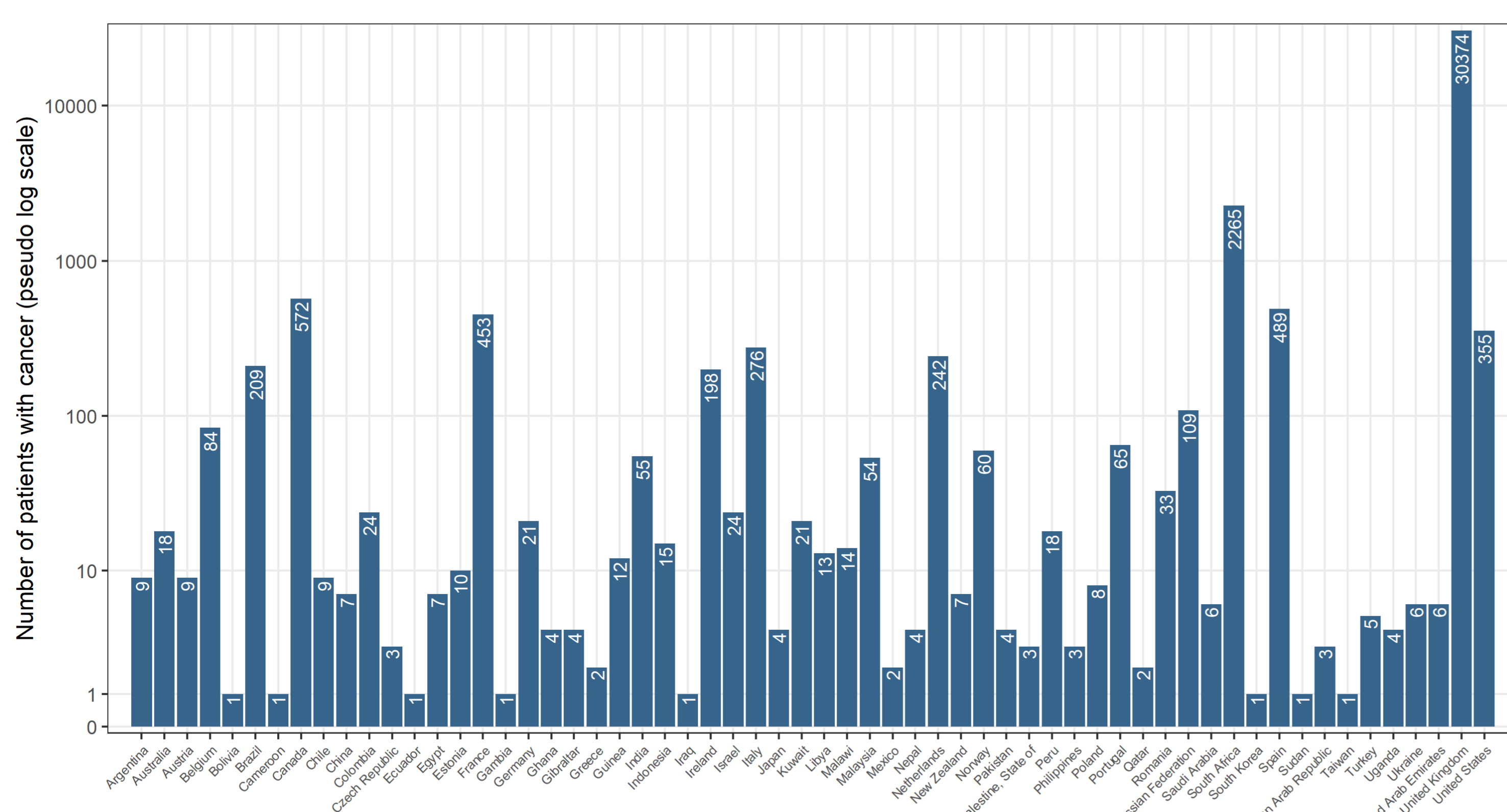
We analysed data on over 800,000 hospitalised patients with COVID-19 from 60 countries collected by the International Severe Acute Respiratory and Emerging Infection Consortium (ISARIC), with most patients from sites in South Africa and the United Kingdom.

This is the largest global prospective cohort describing the characteristics and outcomes of patients with cancer and COVID-19 over the first two years of the pandemic.

Cox regression was used to estimate hazard ratios of death associated with cancer.

RESULTS

36,212 patients had cancer reported, of whom 11,224 (31.0%) died during the COVID-19-associated hospitalisation.



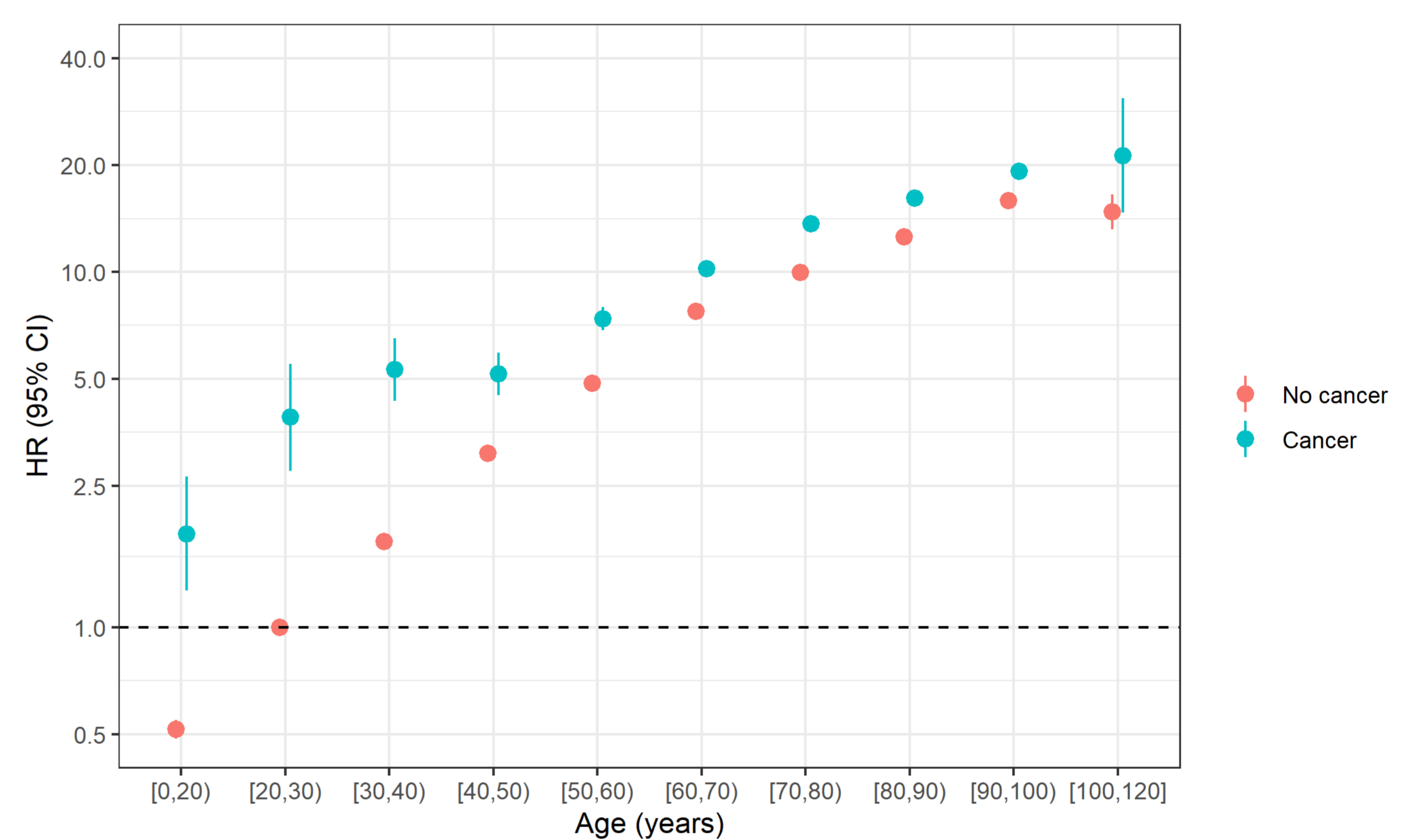
Cancer type and treatment information was available in a subset of patients. Chemotherapy was reported for 476 patients. Metastatic cancer was reported for 867 patients.

RESULTS (continued)

The most common cancer types were haematological (n=2102, of which 560 had leukaemia, 914 lymphoma, and 396 myeloma), breast (n=1493), prostate (n=1005), and lung cancer (n=820).

Symptom prevalence on admission did not differ substantially between patients with and without cancer, and similar proportions met COVID-19 case definitions.

Figure: Hazard ratios and 95% CIs for death by age group in patients with and without cancer Stratified by country



Overall, cancer was associated with a higher risk of death during the COVID-19-associated hospitalisation (HR 1.25 [95% CI 1.22-1.28]) adjusted for age, age², sex, and country.

Relative risks of in-hospital death associated with cancer were higher for young patients, with the 20-30 age group having a HR of 3.19 (95% CI 1.79-5.68).

HRs were similar during the first (2020) and second year of the pandemic (2021).

CONCLUSIONS

Cancer is associated with a higher risk of death in hospitalised patients with COVID-19. Despite the availability of vaccines, patients with cancer remain at a high risk, likely due to less strong and less lasting immune responses, therefore booster vaccinations, therapeutics, and non-pharmacological interventions are likely to continue to be necessary. Our findings may inform clinical planning and patient management.