Data-driven cancer research conference

CANCER RESEARCH UK

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Herpes zoster & post-herpetic neuralgia in cancer survivors compared to individuals with no history of cancer: population-based matched cohort study in England

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BACKGROUND

- **Herpes zoster (HZ), also known as shingles**, is a common infection caused by reactivation of the varicella-zoster virus. It typically presents as a painful rash. Its main complication, **post-herpetic neuralgia** (PHN), can last for months to years and significantly affects quality of life.
- Cancer survivors have a higher risk of HZ, but whether this also increases PHN risk is unclear.
- Since 2023, a new HZ vaccine has been available for patients receiving immunosuppressive systemic cancer treatment, but not for many past survivors.
- We quantified associations between cancer survivorship and (a) first HZ and (b) HZ with PHN, across **20 cancer types** and **treatment phases**, versus people without cancer.

METHODS

- **Data sources:** Linked UK electronic health records, including cancer registry, primary care, hospital records, and death certificates (2014-2021).
- **Study design:** 20 matched cohort studies (one per cancer type)
- Cancer survivors were matched 1:10 to individuals without cancer by sex, age, GP practice, and calendar time.
- **Exposure:** history of cancer recorded in the cancer registry
- **Outcome:** HZ and PHN recorded in primary care or hospital records.
- **Follow up:** from cancer diagnosis until outcome, death, transfer out of GP practice, end of study period (2021).
- **Treatment data:** Chemotherapy (CT), immunotherapy (IT), and targeted therapies from the Systemic Anti-Cancer Treatment dataset and hospital records. Radiotherapy (RT): Radiotherapy Dataset, supplemented with hospital records.
- **Anti-cancer treatment periods defined as:**
  - **No treatment:** From cancer diagnosis to first record of any treatment (CT, IT, targeted therapy, or RT)
  - **During treatment:** From first treatment record until ≤6 months after last CT/IT/targeted therapy/RT
  - **After treatment:** >6 months since last CT/IT/targeted therapy/RT
- **Analysis:** Crude and adjusted hazard ratios (HRs) with 95% confidence intervals (95% CIs) estimated using Cox regression models.

RESULTS

- **224,457 cancer survivors** and **2,013,110** matched **individuals without cancer.** Mean age 67.0 years (SD=14.0). Mean follow-up 3.6 years (range: 0.0 to 7.2 years).
- Increased risks of HZ during cancer treatment were observed for 15 of 20 cancer types, with no increased risks for liver, pancreas, melanoma, bladder, or thyroid cancer.
- Survivors of gastric, lung, kidney, central nervous system, and blood cancers had increased risks of HZ that persisted after treatment (**Figure 1**).

Herpes zoster before, during and after cancer treatment

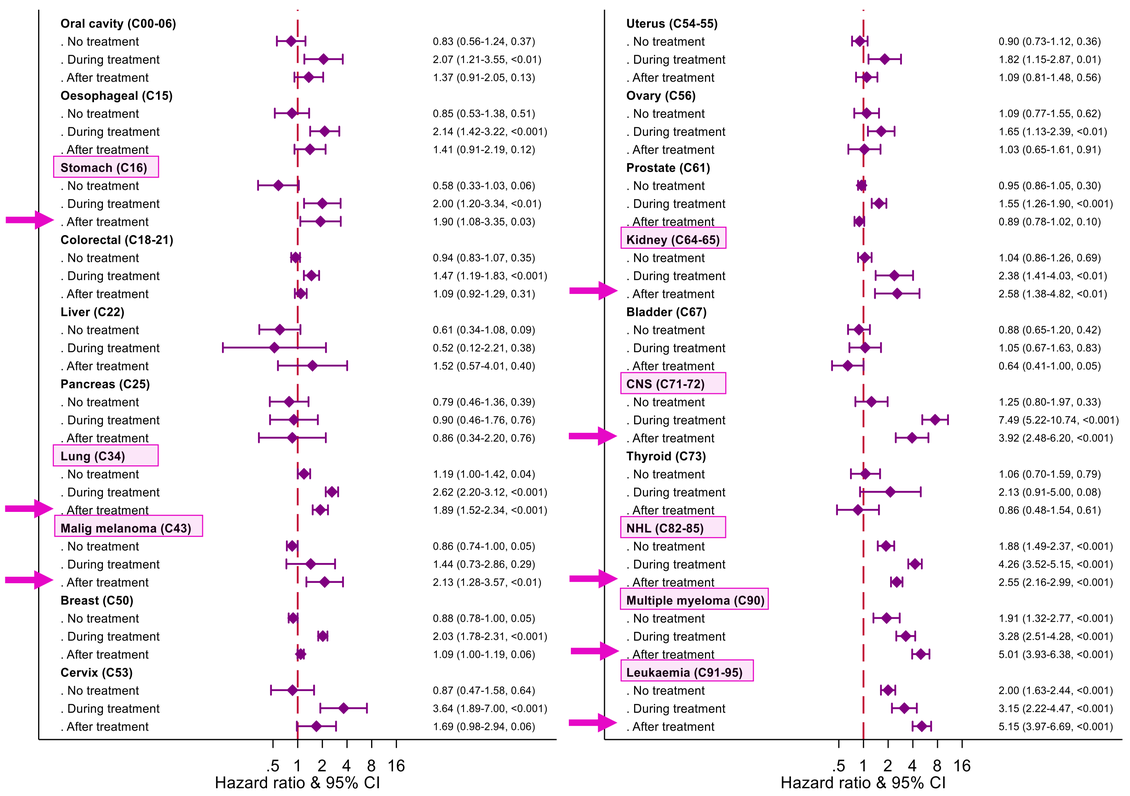

Figure 1. Forest plot of the association between cancer survivorship and herpes zoster (HZ), stratified by treatment phase.

Post-herpetic neuralgia before, during and after cancer treatment

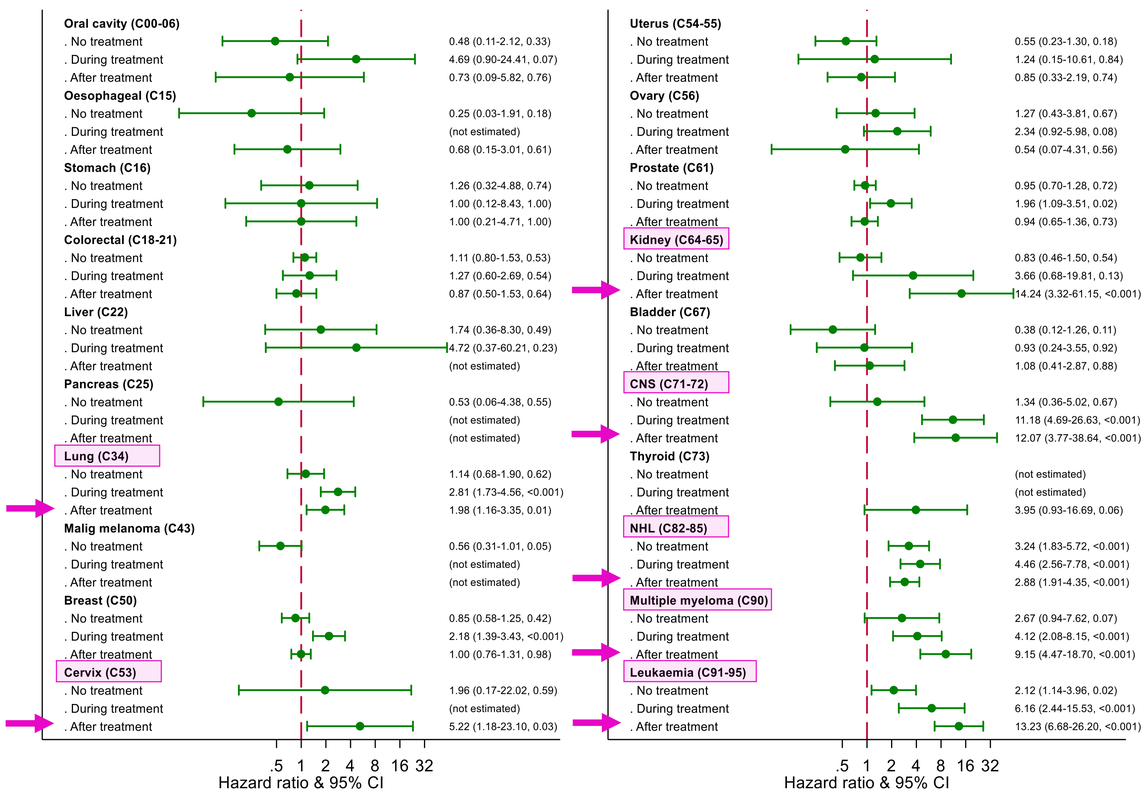

Figure 2. Forest plot of the association between cancer survivorship and post-herpetic neuralgia, stratified by treatment phase.

- Survivors of lung, cervical, kidney, central nervous system, and blood cancers had increased risks of PHN after treatment (**Figure 2**).

CONCLUSIONS

- For 16 cancers, including breast, prostate, and colorectal cancer, we observed increased risks of HZ only during the period of cancer treatment.
- Survivors of **lung, kidney, central nervous system, and blood cancers have increased risks of HZ and PHN during and after immunosuppressive cancer treatment**.
- Individuals with a history of these cancers who are not yet vaccinated may benefit from HZ vaccination.

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