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Association between haemorrhagic fever with renal syndrome and cancers

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Objectives: To investigate the risk of haematologic and solid organ malignancies in patients with haemorrhagic fever with renal syndrome (HFRS) compared with the general population.

Methods: This propensity-score-matched cohort study was conducted using data collected from the Korean national health insurance service (NHIS) between January 2003 and December 2017. The HFRS cohort included 5888 newly diagnosed cases of HFRS, and 412,804 general participants from the NHIS database were included as the control cohort. The incidence rate of malignancies was assessed and compared between the HFRS and control cohorts.

Results: There were 64 cases of haematologic malignancy in 236,286 person-years of observation, and 1245 cases of solid organ cancer in 209,333 person-years. The risks of haematologic malignancy and solid organ cancer were significantly higher in the HFRS cohort [adjusted hazards ratio (aHR) 4.10, 95% confidence interval (CI) 2.36-7.14] than the control cohort [aHR 2.97, 95% CI 2.60-3.38). In subgroup analysis, the HFRS cohort was associated with high hazard ratios for leukaemia and non-Hodgkin lymphoma. The HFRS cohort also had increased aHRs for all types of solid organ cancer.

Conclusions: Patients with HFRS are at increased risk of both haematologic and solid organ malignancies compared with the general population, and this increased proportionally over time. Careful monitoring for malignancy after the onset of HFRS may be necessary.

Figure 1. Cumulative incidence curves for (a) all haematologic malignancies, (b) leukaemia, (c) non-Hodgkin lymphoma, and (d) plasma cell cancer; haemorrhagic fever with renal syndrome (HFRS) vs the control group.

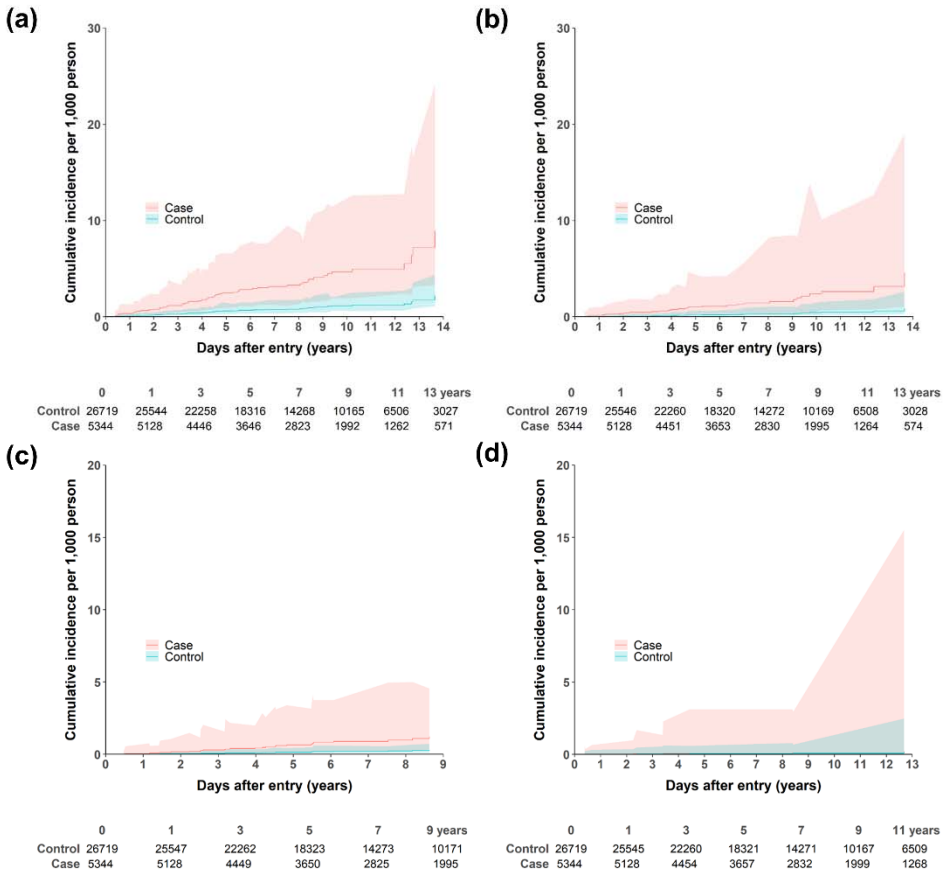

Figure 2. Cumulative incidence curves for (a) all solid cancers, (b) urologic cancer, (c) respiratory cancer, (d) gastric cancer, (e) colorectal cancer, (f) hepatic cancer and (g) thyroid cancer; haemorrhagic fever with renal syndrome (HFRS) vs the control group.