Risk factors for classical Kaposi sarcoma in a population-based case-control study in Sicily.

Submitted by elbrown on Mon, 09/08/2014 - 11:06am

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Title
Publication Type
Year of Publication
Authors
Journal
Volume
Issue
Pagination
Date Published
ISSN
Keywords
Abstract

BACKGROUND: Classical Kaposi sarcoma is a rare complication of Kaposi sarcoma-associated herpes virus (KSHV) infection. We conducted a population-based, frequency-matched case-control study in Sicily to further investigate the reported inverse relationship between smoking and classical Kaposi sarcoma and to identify other factors associated with altered risk.

METHODS: All incident, histologically confirmed classical Kaposi sarcoma cases in Sicily were eligible. A two-stage cluster sample design was applied to select population controls. KSHV seropositivity was determined using four antibody assays (K8.1 and orf73 enzyme immunoassays and two immunofluorescence assays). Using SAS-callable SUDAAN, we compared the characteristics of classical Kaposi sarcoma cases and KSHV-seropositive controls. Odds ratios (OR) and 95% confidence intervals (CI) are presented.

RESULTS: In total, 142 classical Kaposi sarcoma cases and 123 KSHV-seropositive controls were recruited. Current cigarette smoking was associated with reduced risk of classical Kaposi sarcoma amongst males (OR, 0.20; 95% CI, 0.06-0.67). Edema was associated with classical Kaposi sarcoma, but only when it presented on the lower extremities (OR, 3.65; 95% CI, 1.62-8.23). Irrespective of presentation site, diabetes and oral corticosteroid medications were associated with increased risk (OR, 4.73; 95% CI, 2.02-11.1 and OR, 2.34; 95% CI, 1.23-4.45, respectively). Never smoking, diabetes, and oral
corticosteroid medication use were all independently associated with classical Kaposi sarcoma risk.

**DISCUSSION:** We confirmed previous reports that cigarette smoking was associated with a reduced risk of classical Kaposi sarcoma, and we found that risk was lowest among current smokers. We also found that classical Kaposi sarcoma risk was strongly and independently associated with oral corticosteroid use and diabetes. Corroboration of these observations and investigation of possible underlying mechanisms are warranted.

DOI 10.1158/1055-9965.EPI-08-0671
PubMed ID 19064559
PubMed Central ID PMC2701388
Grant List
N01-CO-12400 / CO / NCI NIH HHS / United States
N01-CP-91027 / CP / NCI NIH HHS / United States
Z01 CP010150-08 / CP / NCI NIH HHS / United States