

Table 2.46. Case-control and cohort studies of Hepatocellular carcinoma – studies after year 2000

Reference, study location and period	Organ site (ICD code)	Characteristics of cases	Characteristics of controls	Exposure assessment	Exposure categories	Relative risk (95%CI)*	Adjustment for potential confounders	Comments
Franceschi <i>et al</i> , (2006) Northern Italy (Pordenone) and Naples, 1999–2002 Hospital-based	HCC, 78% histologically confirmed	All new cases admitted to selected hospitals (N=229, out of 261 eligible).	Patients admitted to same hospitals with acute conditions, excluding tobacco or alcohol- related diseases and hepatitis; frequency matched by area, calendar period, gender, and age to cases (N=431 out of 467 eligible subjects)	Face to face interview with standardized questionnaire	Never smoker Former smoker Current smoker Intensity (Current smokers only) Never smoker 1-14 ≥15 p for trend	1.0 0.82 (0.45–1.50) 1.14 (0.61–2.15) 1.0 1.15 (0.55–2.42) 1.13 (0.52–2.45) 0.87	Age, gender, center, education	Interaction with HBsAg ⁺ and/or anti-HCV ⁺ : OR for never/former smokers 23.4 (13.5-40.6 and for current smokers 44.3 (19.7-99.3). OR for current smokers versus never/former smokers for in those HBsAg- and/or anti-HCV-1.02 (0.53-1.97)
Hassan <i>et al</i> , (2008) MD Anderson Cancer Centre, Houston USA, 2000–2006 Hospital-based	HCC histologically confirmed	All new case admitted to MD Anderson (N=319, out of 390 eligible subjects)	Healthy nonblood relatives of the cases, excluding liver, GI, lung or UADT cancers (N=1061, 82% of eligible subjects). No matching.	Face to face interview with standardized questionnaire	Intensity (cigs/days) Men Never smoker ≤20 20+ p for trend Women Never smoker ≤20 20+ p for trend	1.0 1.9 (1.2–3.3) 1.7 (1.0–3.2) - 1.0 1.0 (0.5–1.9) 0.8 (0.2–3.1) -	Age, ethnicity, marital status, residence, HCV, HBV, diabetes, alcohol consumption, family history of cancer, education	Potential residual confounding (all covariates have a statistically significant association with case-control status The effect of quitting smoking in men is not credible The effect of HCV infection was enhanced in men by smoking. OR HCV+ smoking – 28.9 (7.3-114.2) versus HCV+ smoking + 136.3 (43.2-429.6) while smoking did not effect of HBV infection.

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Hassan <i>et al</i> , (2008) (Contd)	HCC histologically confirmed	All new case admitted to MD Anderson (N=319, out of 390 eligible subjects)	Healthy non-blood relatives of the cases, excluding liver, GI, lung or UADT cancers (N=1061, 82% of eligible subjects). No matching.	Face to face interview with standardized questionnaire	Duration (years) Men Never smokers ≤20 >20 p for trend Women Never smokers ≤20 >20 p for trend Years since cessation Men ≤10 >10 Women ≤10 >10 (never smokers ref category)	1.0 1.6 (0.9–2.9) 2.1 (1.2–3.6) - 1.0 0.4 (0.2–1.2) 1.5 (0.7–2.9) 2.4 (1.2–4.9) 1.7 (0.9–2.8) 1.1 (0.4–2.9) 0.8 (0.4–1.8)	Age, ethnicity, marital status, residence, HCV, HBV, diabetes, alcohol consumption, family history of cancer, education	Potential residual confounding (all covariates have a statistically significant association with case-control status) The effect of quitting smoking in men is not credible The effect of HCV infection was enhanced in men by smoking. OR HCV+ smoking – 28.9(7.3-114.2) versus HCV+ smoking + 136.3(43.2-429.6) while smoking did not effect of HBV infection.
Ohishi <i>et al</i> , (2008) Hiroshima and Nagasaki cohort (nested case-control), Japan Population-based	HCC	Cohort established in 1958, 20000 atomic bomb survivors plus persons not present in the cities at time of bombing. Incident HCC cases identified through Cancer Registry (N=359, 224 with serum samples) Controls randomly selected among those matching the cases for age, gender, city, time and method of serum storage (N=644). Counter matching on radiation exposure.		Self-administered standardized questionnaire (administered in 1965 and 1978)	Never smoker Former smoker Current smoker	1.0 1.12 (0.25–5.07) 2.03 (0.82–4.98))	Age, gender, city, time and method of serum storage. Counter matching on radiation exposure	