Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Khurana *et al.* (2007), USA, Veterans Health Administration	Nested case-cohort study of Veterans Integrated Service Networks; 475 cases identified during 1998–2004 through health care system; age range not stated; 483 258 controls without pancreatic cancer	Lifestyle (alcohol, smoking) data obtained from clinical provider	*Current alcohol use* No Yes	Not stated 184	1.0 0.79 (0.65–0.96)	Age, sex, smoking, ethnicity, body mass index, statin use, diabetes	The control population included all other participants enrolled in the study that did not have pancreatic cancer
Allen *et al.* (2009), United Kingdom, Million Women Study [data also presented in Stevens et al. (2009)	Analytical cohort of 1 280 296 women recruited 1996–2001; aged 50–64 years; follow-up until 2006; 1 325 cases identified through cancer registries	Self-administered questionnaire at baseline and 3 years later	*Usual intake (drinks/week)* None < 2 3–6 7–24 ≥ 15 Per 10 g/d p for trend	378 382 255 237 73	*RR (95% floated CI)* 1.07 (0.97–1.20) 1.00 (0.90–1.11) 0.88 (0.78–1.00) 1.00 (0.88–1.14) 1.07 (0.85–1.35) 1.04 (0.94–1.15) 0.5	Age, region, socioeconomic status, body mass index, smoking, physical activity, oral contraceptive use, hormone replacement therapy use	Alcohol intake of < 2 drinks/week taken to be the reference group; no difference by beverage type (wine versus other drinks)

Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Heinen *et al.* (2009), Netherlands, Netherlands Cohort Study	Initial cohort of 120 852 men and women recruited in 1986; aged 55–69 years; followed-up until 1999; 350 cases identified through cancer registry; 67% histologically confirmed; 3 980 non-cases randomly selected as controls with data on covariates	Self-administered questionnaire	*Alcohol intake (g/d)*			Age, sex, smoking, energy intake, body mass index, vegetable intake, fruit intake	Similar association for subgroup of cases with confirmed histology; similar association for subgroup with stable alcohol intake (same alcohol intake for previous 5 years); no difference by beverage type; no differences by subgroup of smoking (shown), or folate intake; significant interaction with follow-up time (shown); increased risk seen for men (≥ 30 g/d versus none (RR: 1.82. 95% CI: 1.03–3.23), and no association in women (RR:1.07, 95% CI: 0.45–2.53), but few numbers of heavy drinkers in women (n= 7)
			None	73	1.0		
			0.1–4.9	93	1.03 (0.74–1.42)		
			5–14.9	82	1.12 (0.79–1.57)		
			15–29.9	50	0.86 (0.58–1.28)		
			≥ 30	52	1.57 (1.03–2.39)		
			p for trend		0.12		
			Per 10 g/d		1.06 (0.98–1.13)		
			Cases diagnosed < 7 years	150			
			Per 10 g/d		1.11 (1.01–1.22)		
			Cases diagnosed ≥ 7 years	200	1.01 (0.91–1.11)		
			Per 10 g/d				
			Smoking status:				
			Never smokers		1.0		
			None	33	1.07 (0.66–1.73)		
			0.1–4.9	37	1.20 (0.66–2.17)		
			5–14.9	18	0.94 (0.35–2.49)		
			15–29.9	5	1.77 (0.58–5.33)		
			≥ 30	4			
			Past smokers				
			None	29	1.0		
			0.1–4.9	36	1.22 (0.65–2.28)		
			5–14.9	21	1.41 (0.75–2.68)		
			15–29.9	23	0.98 (0.48–2.02)		
			≥ 30		2.40 (1.06–5.41)		
			Current smokers				
			None	18	1.0		
			0.1–4.9	27	1.65 (0.76–3.57)		
			5–14.9	28	1.60 (0.73–3.51)		
			15–29.9	24	1.40 (0.63–3.13)		
			≥ 30	25	2.40 (1.06–5.41)		
			p for interaction		0.97		

Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Jiao *et al.* (2009), USA, NIH-AARP Diet and Health Study	Analytical cohort of 470 681 men and women recruited 1995–96; aged 50–71 years; followed-up until 2003; 1 149 cases identified through cancer registry and death certificates (748 men, 401 women)	Self-administered questionnaire	*Alcohol intake (drinks/day)*			Age, sex, smoking, energy intake, intake of saturated fat, red meat, folate, body mass index, physical activity, history of diabetes	All analyses excluded first year of follow-up; increased risk seen for sprits, and not for beer or wine intake (RR for ≥ 3 versus 0: 1.62, 95% CI: 1.24–2.10); no significant interaction on risk by lifelong smoking status, number of years since quitting, sex or folate intake; no difference by subgroup of history of diabetes
			0	305	1.14 (0.99–1.32)		
			0.1–0.99	556	1.0		
			1–2.00	162	0.96 (0.80–1.15)		
			≥ 3	126	1.45 (1.17–1.80)		
			p for trend		0.002		
			Men				
			0	168	1.12 (0.93–1.34)		
			0.1–0.99	343	1.0		
			1–2.00	126	0.97 (0.79–1.19)		
			≥ 3	111	1.50 (1.18–1.90)		
			p for trend		0.001		
			Women				
			0	137	1.21 (0.97–1.51)		
			0.1–0.99	213	1.0		
			1–2.00	36	0.86 (0.60–1.23)		
			≥ 3	15	1.24 (0.72–2.13)		
			p for trend		0.75		
			Smoking status				
			Never				
			0	99	0.98 (0.76–1.26)		
			0.1–0.99	177	1.0		
			1–2.00	36	0.94 (0.66–1.36)		
			≥ 3	16	1.35 (0.79–2.30)		
			p for trend		0.41		
			Ever				
			0	206	1.24 (1.05–1.48)		
			0.1–0.99	379	1.0		
			1–2.00	126	0.95 (0.78–1.17)		
			≥ 3	110	1.50 (1.18–1.90)		
			p for trend		0.003		

Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Jiao *et al.* (2009) (contd)			*Former ≥ 10 years*				
			0	99	1.13 (0.89–1.44)		
			0.1–0.99	210	1.0		
			1–2.00	77	1.01 (0.78–1.32)		
			≥ 3	48	1.41 (1.01–2.00)		
			p for trend		0.03		
			Former < 10 year/current				
			0	107	1.37 (1.07–1.74)		
			0.1–0.99	169	1.0		
			1–2.00	68	0.87 (0.63–1.20)		
			≥ 3	43	1.54 (1.11–2.13)		
			p for trend		0.09		

Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Johansen *et al.* (2009); The Malmö Preventative Project, Sweden	Analytical cohort of 33 346 (22 444 men, 10 902 women), recruited into a screening study for cardiovascular disease and alcoholism between 1975–92, with an average age of 50 years for men and 44 years for women; followed-up for an average of 22 years (up until 2004); 183 cases identified through cancer registry; most, but not all cases had histological confirmation	Self-administered questionnaire: 7 questions on drinking habits designed to detect alcoholism, scored according to a modified version of the Michigan Alcoholism Screening Test (Mm-MAST) Serum γ-glutamyl transferase (γ-GT)	*Mm-MAST score* Low Intermediate High p for trend *γ-GT levels* < 0.29 0.29–0.40 0.41–0.62 ≥ 0.63 per 0.1 increment *Smoking status (MAST)* *Never* Low Intermediate/high *Past* Low Intermediate/high *Current* Low Intermediate/high *Smoking (γ-GT)* *Never* Low Intermediate/high *Past* Low Intermediate/high *Current* Low Intermediate/high	71 78 14 32 43 40 68 38 107 38 38 107 38	1.0 1.50 (1.07–2.08) 1.58 (0.88–2.86) 0.02 1.0 1.52 (0.95–2.45) 1.24 (0.75–2.03) 2.15 (1.34–3.44) 1.01 (1.005–1.02) 1.0 1.31 (0.63–2.72) 1.0 1.39 (0.91–2.12) 1.0 2.13 (1.05–4.32) 1.0 1.32 (0.60–2.90) 1.0 2.01 (1.34–3.02) 1.0 1.21 (1.59–2.48)	Age, sex, smoking, BMI	No significant interaction with body mass index, weight gain or smoking; no questions on absolute alcohol intake on the questionnaire; questions designed to reflect behaviour rather than quantity of intake

Table 2.26. Cohort studies of consumption of alcoholic beverages and cancer of the pancreas

Reference, location, name of study	Cohort description (No. in analysis)	Exposure assessment	Exposure categories	No. of cases	Relative risk (95% CI)	Adjustment factors	Comments
Rohrmann *et al.* (2009), Europe, European Prospective Investigation into Cancer and Nutrition	Analytical cohort of 478 400 men and women recruited 1992–2000; age range not stated; follow-up until 2002 up to 2005 depending on recruitment centre; 555 cases identified through cancer registries and, in some centres, through active follow-up (self-report and validated through medical and pathology records)	Self-administered questionnaire at baseline; question on recent intake (in the last year) and lifelong intake (at age 20, 30, 40, and 50 years)	*Recent intake (in the last year; g/d)*			Age, sex, smoking, centre, height, weight, diabetes	No association for wine, beer or spirits, although slightly increased risk for lifetime intake of spirits 10+ g/d (1.40, 95% CI: 0.93–2.10); no differences by subgroup of sex, smoking, or body mass index
			0	78	1.06 (0.79–1.41)		
			0.1–4.9	166	1.0		
			4–14.9	140	0.98 (0.78–1.24)		
			15–29.9	91	1.06 (0.81–1.39)		
			≥ 30	80	0.98 (0.72–1.32)		
			Per 10 g/d		1.00 (0.96–1.05)		
			Former		1.21 (0.68–2.16)		
			Average lifetime intake (g/d)				
			0	24	0.78 (0.50–1.24)		
			0.1–4.9	139	1.0		
			4–14.9	113	0.86 (0.66–1.12)		
			15–29.9	68	0.87 (0.63–1.20)		
			≥ 30	58	0.94 (0.64–1.37)		
			Per 10 g/d		0.99 (0.94–1.05)		
			Non/former smokers	318			
			10+ versus 0.1–4.9 g/d:		1.51 (0.85–2.70)		