Table 2.21. Prospective nested case–control studies of *helicobacter pylori* infection and pancreatic cancer

Reference, study location and period	Characteristics of cases	Characteristics of controls	Detection method	Exposure categories	No. of exposed cases	Relative risk* (95% CI)	Adjusted potential confounders	Comments
Stolzenberg-Solomon *et al* (2001) Finland 1985-1995	121 cases from Alpha-Tocophererol, Beta-Caratone Cancer Prevention Study (ATBC) of 29,133 male Finnish smokers aged 50-69 at baseline. Cases identified through Finnish Cancer Registry and death certificates. All cases incident primary malignant neoplasm of exocrine pancreas confirmed by medical record review and histolopathologic /cytologic review for confirmation by 1 or 2 pathologists.	226 controls from ATBC matched to cases on date of baseline serum collection, study center, age ($\pm$ 5 yrs), trial intervention and completion of dietary questionnaire. Alive at the time matching case was diagnosed. Remained free of cancer during 10 years of follow-up.	Serology/ELISA Anti *H.pylori* IgG (whole cell) and CagA antigens. Assays of fasting serum collected at baseline and stored at -70°C. Duplicate assays and a third run for samples with discordant *H.pylori* classification in duplicates.	*Seropositive OD for H.pylori + WC $\geq$ 1.0 or* *CagA+>0.35*	*H.pylori+* 99 CagA+ 73 CagA⁻ 26	*H.pylori+* 1.87(1.05-3.34) CagA+ Strain 2.01(1.09-3.70) CagA⁻ Strain 1.65(0.82-3.29)	Adjusted for matching factors (age, month of blood draws, completion of dietary history, study center, intervention group assignment) and years smoked.	Laboratory analysis well described. 82% cases seropositive; 75% controls seropositive.

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Borgström *et al* (2004) Sweden 1974-1992	126 cases of pancreatic cancer diagnosed between 1974 and 1992, from a cohort of 33,000 persons examined in a health screening investigation. 87 cases with stored serum samples matched to controls. Median age of cases, 60.5 years and age range 45-76.	263 controls from cohort matched on age, gender, time of sampling. No further description of controls provided.	Serology/ELISA anti *H.pylori* IgG in serum stored or -20°C for up to 21 years before analysis.	*Positive cutoff point not provided.*	34	1.1(0.7-1.8)	No	RR not provided; crude RR computed from data in abstract.

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Lindkvist *et al* (2008) Sweden 1974-1992	87 cases with primary pancreatic cancer (KD7) were identified by record linkage with the Swedish Cancer Registry from the Malmö Preventive Project Cohort Study of 33,346 individuals and had the requisite biological specimens for the study. 80 of cases were histologically confirmed primary pancreatic in 5 cases biopsy indicated on differentiated adenocarcinoma of unclear origin by radiology indicated primary pancreatic tumour, and 2 cases were based on clinical and radiological findings	263 controls matched to cases on age ($\pm$ 180 days), sex, and time of baseline examination ($\pm$ 180 days) were selected from the cohort.	Serology/ELISA Anti *H. pylori* IgG	*H. pylori*+ Absorbance > 0.70	139

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20 | All subjects 1.25(0.75-2.09)

Never smokers 3.81 (1.06-13.63)

Low alcohol consumers 2.13 (0.97-4.69) | Age, sex, BMI, smoker status, alcohol consumption since baseline | |

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de Martel *et al* (2008) USA 1964-1969	104 randomly selected cases of pancreatic cancer from 507 cases diagnosed in a cohort of 128,992 adult subscribers in Kaiser Permanente Medical Care Program.92 patients with histologically	262 pancreatic cancer free controls previously tested for other studies. Matched to cases on age, gender race, site and date of health check-up.	Serology/ELISA anti *H. pylori*; IgG and serum IgG to a recombinant fragment of CagA. Serum samples stored at -23°C and since 1980 at -40°C.	*Positive ELISA twice the mean value of 15 known negative controls.*	67 87	*H.pylori*+ 0.85(0.49-1.48) CagA+ 0.96(0.48-1.92)	Cigarette smoking and education.	Healthy controls and case tested in 2003 and other controls tested in 1996.