

**Table 2.18. Case-control studies of benzene and kidney cancer**

Reference, study location and period	Characteristics of cases	Characteristics of controls	Exposure assessment	Organ site (ICD code)	Exposure categories	No. of exposed cases	Odds ratio (95% CI)*	Adjustment for potential confounders	Comments
Gérin <i>et al.</i> , (1998) Canada	Between 1979 and 1986, 4,576 eligible male cases of 19 cancer sites (857 LC) ascertained from all the large hospitals in Montreal 3,730 (82%) agreed to participate; 82% of responses were obtained from the subject and the rest from a next-of-kin.	Men selected from electoral lists of the Montreal area, age-stratified to the age distribution of cancer patients. Of 740 selected, 533 (71%) were interviewed. For each case series, a pooled control group was formed by the addition of an additional 533 cancer controls selected randomly from eligible cancer cases to the 533 population controls.	Interviewers obtain a detailed description of each job the subject had in his working lifetime; chemists noted their confidence that the exposure occurred (possible, probable, definite), the frequency of exposure (less than 5% of the time, 5–30%, more than 30%), and the concentration of the agent in the environment (low, medium, high). These were then combined into exposure categories.	KC 189	Benzene Unexposed Low Medium/high	138 27 12	1.0 1.2 (0.7-1.9) 1.3 (0.7-2.4)	Age, family income, ethnic group, cigarette smoking, and respondent status.	

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Pesch <i>et al.</i> , (2000), Germany	935 cases of renal cell carcinoma identified 1991-1995 in five German regions (570 male, 365 female). Response rate 88%.	Randomly selected (4:1) from local residency records, frequency matched by region, sex and age (2650 male, 1648 female). Response rate 71%.	Personal interviews including occupational history and job tasks. A job exposure matrix was applied to estimate specific exposures.	KC 189	Benzene exposure index:			Age, study centre, smoking.	Exposure categories defined by 30 <sup>th</sup> , 60 <sup>th</sup> , and 90 <sup>th</sup> percentiles of the distribution among exposed controls.
					Medium	159	1.2 (1.0-1.5)		
					Males	60	1.4 (1.0-1.9)		
					Females				
					High				
					Males	156	1.2 (1.0-1.6)		
Females	64	1.3 (1.0-1.8)							
Substantial									
Males	52	1.4 (1.0-1.9)							
Females	14	1.4 (0.9-1.7)							