

Table 2.5.1: Cohort studies on relationship of endocrine disruptors with testicular cancer

Region and subjects	Number of subjects	Follow-up period	Compound	Confounders considered	Relative risk (SMR, SIR, etc.) by category				
					1	2	3	4	P trend
Leary, 1984									
Rochester, U.S. Men born at Mayo Clinic in 1939-62 living in a 100-mile radius from Rochester Retrospective study	828 Exposed/676 unexposed		DES						One incidence in the exposed group (781 who survived for at least 1 year) No incidence in the unexposed group
Wiklund, 1986									RR with respect to control cohort
Sweden Farm workers, qualified pesticide spraying operators Retrospective study	254,417 Farm workers, of which 20,245 pesticide spraying operators 1,725,845 Workers in other industries	1961-79 for farm workers, 1965-76 for farm workers	for farm workers						0.83 (37 cases, 0.59-1.18) (1961-66) 0.94 (42 cases, 0.67-1.32) (1967-73) 1.35 (38 cases, 0.94-1.93) (1974-79)
			for farm workers						1.55 (18 cases, 0.92-2.45) (1965-76)
Saracci R, 1991									
Cohorts from Australia, Austria, Canada, Denmark, Finland, Italy, Holland, New Zealand, Sweden and U.K. Retrospective study	18,390 (16,863 men, 1,527 women) 13,482 exposed, 416 probably exposed, 3,951 unexposed, 541 unknown	1955-88 (varies by cohort)	Chlorophenoxy herbicides (2,4-T, 2,4,5-T, 2,4,5-TCP, 2,4,6-TCP, 2,4-DCP, 2,4-DP, 2,4-DB, 2,3,4,6-TeCP, MCPA, MCPB, MCPP, PCP, PBA)						SMR (95% CI) (deaths observed) Exposed: 225 (90-464) (7) Probably exposed: 225 (90-464) (7) Unexposed: 0 (0-444) (0) Unknown: 0 (0-3074) (0)
Dich, 1996									
Sweden Qualified pesticide spraying operators, the same population as Wiklund, K. et al. (1986)	20,025	Up to death or 1991	Pesticide spraying operators						SIR: 1.099 (0.68-1.67, O/E=21/19.2)
Fleming, 1999									
Florida, U.S. Qualified pesticide spraying operators	33,658 (30,155 men, 3,503 women)	1975-93	Pesticide spraying operators	Age, calendar year (adjusted)					SIR (95% C) All subjects: 2.48 (1.57-3.72) (23 observed) Private operators: 2.37 (1.33-3.91) (15 observed) Commercial or public operators: 2.72 (1.17-5.36) (8 observed)
Fleming, 1999									
Florida, U.S. Qualified pesticide spraying operators	33,658 (30,155 men, 3,503 women)	1975-93	Pesticide spraying operators	Age, calendar year (adjusted)					SMR(95% C) 1.05(0.01-5.81) (1 Observed)
Strohsnitter, 2001									
4 Cohorts from U.S. (Mayor Clinic, Dieckmann, Women's Health Study, Home)	3,613 (1,709 exposed, 1,904 unexposed)	1978-94	DES	Follow-up period, age at the beginning of follow-up, mother's age on delivery, mortality, race, education, mother's breast cancer history, cryptorchidism, order of birth, body weight on birth, mother's hemorrhage before delivery, smoking and drinking habits					RR 3.05 (0.65-22.0) SIR of exposed group: 2.04 (0.32-4.20)

Table 2.5.2: Case-control studies on relationship of endocrine disruptors with testicular cancer

Region and number of subjects (case/control)	Compound	Comparison of serum levels		P value	Odds ratio by category				P trend	
		Case	Control		1.00	2	3	4		
Schottenfeld, 1980										
U.S. Whites Hospital-based Case/neighborhood control/hospital control 190/141/163	DES and other hormone preparations (mother's exposure)			1.00		2.83 (P=0.17) Neighborhood control (1)				
				1.00		2.44 (P=0.18) Hospital control				
McDowall, 1984										
England, Wales Population-based 1384/1384	Agriculture Farmers Farm workers			1.00		1.57 (42 cases/27 controls, 0.94-2.64)				
				1.00		1.89 (30 cases/16 controls, 0.99-3.60)				
						12 cases/11 controls				
Mills, 1984										
U.S. nationwide All races Hospital-based 347/347	Agriculture			1.00		6.27 (95%CI: 1.83-21.49)				
Moss, 1986										
North California, U.S. Population-based Cases diagnosed in 1976-81, 40 years or less of age 273 Matched pairs	DES (exposure during gestation)			1.00		2.0 (症例 4/対照 2、有意差なし)				
Sewell, 1986										
New Mexico, U.S. Whites Population-based 81/311	Agriculture			1.00		0.56 (0.21-1.47)				
Gershman, 1988										
Connecticut, U.S. Population-based 173/173, of which 79/79 answered to questionnaire	DES (exposure in utero)			1.00		1.0 (1 case/1 control)				
Ohlson, 2000										
Sweden Population-based 148/314	Ethylhexyl phthalate plasticizer for PVC (?)			1.00		5.6 (1.1-196) (exposed/unexposed = 6/2)				

Region and number of subjects (case/control)	Compound	Comparison of serum levels			Odds ratio by category				P trend
		Case	Control	P value	1.00	2	3	4	
Hardell, 2003		Median serum level (ng/g fat)			Median or lower Higher than median				
Sweden	Children								
Hospital-based	Total PCBs	357.0	364.0	0.91	1.00		1.1 (0.5-2.6)		
58 Cases (18-45 years of age, 22 seminoma, 36 non-seminoma)	HCB	24.0	22.0	0.33	1.00		1.7 (0.8-3.6)		
61 Controls (19-47 years of age, 14 seminoma, 30 non-seminoma)	p,p'-DDE	117.0	98.0	0.27	1.00		1.7 (0.8-3.7)		
45 Mothers of controls	heptachlordane	1.2	1.0	0.30	1.00		1.6 (0.8-3.4)		
	chlordane	0.8	0.9	0.71	1.00		1.2 (0.6-2.6)		
	oxychlordane	6.9	6.5	0.61	1.00		1.4 (0.7-2.9)		
	MC6	2.0	1.9	0.97	1.00		1.3 (0.6-2.9)		
	trans-nonachlordane	7.5	7.9	0.87	1.00		1.0 (0.4-2.1)		
	cis-nonachlordane	1.5	1.1	0.04	1.00		2.6 (1.2-5.7)		
	Total chlordanes	21.0	21.0	0.41	1.00		1.3 (0.6-2.8)		
	Mothers								
	Total PCBs	792.0	563.0	0.0006	1.00		3.8 (1.4-10)		
	HCB	39.0	31.0	0.005	1.00		4.4 (1.7-12)		
	p,p'-DDE	315.0	324.0	0.48	1.00		1.3 (0.5-3.0)		
	heptachlordane	1.0	0.8	0.12	1.00		2.1 (0.8-5.0)		
	chlordane	0.7	0.7	0.24	1.00		2.5 (0.99-6.1)		
	oxychlordane	10.0	9.4	0.24	1.00		2.6 (0.9-7.1)		
	MC6	4.2	3.8	0.09	1.00		1.3 (0.5-3.2)		
	trans-nonachlordane	17.0	13.0	0.02	1.00		4.1 (1.5-11)		
	cis-nonachlordane	1.3	1.0	0.008	1.00		3.1 (1.2-7.8)		
	Total chlordanes	34.0	31.0	0.04	1.00		1.9 (0.7-5.0)		

P values calculated from the data

Table 2.5.3: Ecological studies on relationship of endocrine disruptors with testicular cancer

Region and number of subjects	Compound	Comparison of serum levels			Odds ratio by category				
		Case	Control	P value	1(low)	2	3	4(high)	P trend
Ekbohm, 1996									
Denmark, Norway, Sweden and Finland Ecological cross-sectional study	DDE	DDE Concentration in breast milk and prevalence show similar tendencies in four countries							
Schreinemacher, 1999									
4 Regions in Minnesota, U.S. 1980-89 Whites	Ethylenebisdithiocarbamates and other herbicides (?)				SRR (95% CI) (compared with urban and forest areas) Region 1 (corn, soybean)				
Koifman, 2002									
11 States in Brazil	Pesticides	Correlation factor between pesticide sales in 1985 and testicular cancer mortality in 1996-98: $r = 0.53$ (95% CI = -0.39-0.75)							