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LETTER TO THE EDITOR

Dear Sir,

Hodgkin's disease and parity

Studies from Norway (Kravdal and Hansen, 1993), Italy (Franceschi et al., *1994), Sweden (Olsson* et al., *1990) and Israel (Abramson* et al., *1978) have suggested that parity is protective against Hodgkin's disease among women, but not among men. A Canadian study found that the risk of Hodgkin's disease increased with parity (Miller* et al., *1980), but subjects were restricted to married women and the study may not have adequately controlled for socioeconomic status (Glaser, 1994). Hormonal and immunologic mechanisms have been postulated as explanations for a protective effect of pregnancy against Hodgkin's disease.*

We have evaluated this association in data from 2 case-control studies conducted in the United States. In Nebraska, telephone interviews were obtained from 70 (35 female, 35 male) patients with Hodgkin's disease newly diagnosed during 1983–1986 and from 1,432 (707 female, 725 male) population-based controls (Zahm et al., *1990, 1992, 1993). Increasing parity was associated with decreased risk of Hodgkin's disease among women, with the risk reduced by more than one-half among those with 3 or more children (Table I). However, the effect was limited to women classified as being of higher socioeconomic status, defined as having had more than a high-school education. A lowered risk of Hodgkin's disease was also observed among men who had fathered children. These findings appear to argue against a protective role of pregnancy itself and to call for further study of socioeconomic correlates. Similar patterns were observed for nodular sclerosis and other histologic types.*

In Kansas, a different pattern of risk associated with parity was observed in an interview study involving 121 men newly diagnosed with Hodgkin's disease during 1976–1982 and 948 population-based controls (Hoar et al., *1986; Zahm* et al., *1988). Parity was not protective overall or in either socioeconomic category. In fact, in the low socioeconomic category, parity was associated with increased risk. The effects of parity did not vary significantly by histologic type.*

*It is difficult to explain the inconsistent data on parity and Hodgkin's disease in these studies. If parity were protective through a hormonal or immunologic process related to pregnancy, it would seem likely to affect women regardless of socioeconomic status, but not men. If parity were protective for reasons related to socioeconomic status (*e.g., *age at first exposure to an infectious agent), the effect should be seen in both genders. Based on the conflicting data from these 2 studies, we cannot distinguish between possible mechanisms. Further studies are needed in both genders to clarify the reported association between Hodgkin's disease and parity, with special attention to such factors as age at first pregnancy, abortion history, exposures of offspring, socioeconomic status and histologic subtype.*

Yours sincerely,

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TABLE I – HODGKIN'S DISEASE AND PARITY AMONG MEN AND WOMEN IN NEBRASKA AND KANSAS, BY SOCIOECONOMIC STATUS

Socioeconomic status[1]	Parity	Nebraska–Women			Nebraska–Men			Kansas–Men		
		Cases	Controls	OR (95% CI)[2]	Cases	Controls	OR (95% CI)	Cases	Controls	OR (95% CI)
All	0	15	136	1.0	11	121	1.0	31	222	1.0
	1–2	11	237	0.6 (0.2,1.8)	9	238	0.5 (0.2,1.3)	53	324	1.4 (0.8,2.3)
	3+	9	325	0.4 (0.1,1.3)	14	363	0.7 (0.2,1.9)	37	396	1.0 (0.5,1.8)
	Unknown	0	9	—	1	3	—	0	6	—
Low	0	3	72	1.0	7	83	1.0	10	127	1.0
	1–2	7	150	1.2 (0.2,8.4)	6	156	0.5 (0.1,1.9)	31	184	2.3 (0.99,5.4)
	3+	6	224	1.0 (0.2,6.0)	6	243	0.4 (0.1,1.5)	19	252	1.3 (0.5,3.6)
High	0	12	53	1.0	4	33	1.0	18	73	1.0
	1–2	4	69	0.3 (0.1,1.6)	3	71	0.5 (0.1,3.1)	21	120	1.0 (0.4,2.1)
	3+	2	82	0.1 (0.002,0.9)	8	103	1.4 (0.2,9.9)	15	97	0.8 (0.3,2.2)

[1]Socioeconomic status: Low = high-school education or less; high = more than high school (includes college and post-high-school vocational training). Subjects with unknown or "other" education appear in the "all" socioeconomic status row only.–[2]OR (95% CI) = Odds ratio (95% confidence interval), adjusted for age (20–39, 40–49, 50–59, 60–69, 70+).

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