Several of the descriptive epidemiologic features of testicular germ cell tumors speak against the hypothesis that the etiologies of seminoma and nonseminoma are identical. For example, among boys 0–14 years of age, nonseminoma is virtually the only type of testicular germ cell tumor. The incidence rate of nonseminoma is constant in boys (0–14 years of age) but is considerably higher in men. The age at which the incidence rate of nonseminoma peaks is approximately 10 years earlier than the age at which that of seminoma peaks. Incidence trend patterns for seminoma and nonseminoma differ (1).

Thomas et al. (2) provided evidence that the etiologies of seminoma and nonseminoma do not differ based on a case-only study design. Their finding is in line with results of a recent systematic review of seminoma and nonseminoma exposure–effect estimates that included 73 publications and 631 exposures (3). However, we do not agree with the assertion by Thomas et al. that “this approach is not well suited to [testicular germ cell tumors] because risk factors remain largely unknown” (2, p. 1241). Several established risk factors are mentioned by Thomas et al. These risk factors also played a role in the systematic review.

A key assumption needed for the interpretation of this analysis is not met: “[T]he probability of occurrence of a first cancer in an individual [is] the same as the probability of a second cancer, given the occurrence of the first cancer” (4, p. 937). Typically, the estimated standardized incidence ratios of a second primary testicular cancer are approximately 10–20 (5–8). Most likely, some of the other assumptions needed for the approach suggested by Begg (4) are not met for testicular germ cell cancer. Therefore, despite replication of the results of Thomas et al., we are uncertain about the meaning of these results.

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