TESTICULAR CANCER

Marijuana use linked with testicular cancer

Marijuana use is associated with an increased risk of testicular cancer, Daling *et al.* report in the first study to find a link between the drug and the disease. The association seems to be particularly strong for aggressive forms of the cancer.

Dr Janet Daling explained that she was first prompted to explore the possible association about 10 years ago, after learning at a lecture that researchers “had found the receptors for THC [tetrahydrocannabinol; the main psychoactive component in marijuana] on the testes.” Marijuana is known to have adverse effects on the endocrine and reproductive systems, such as lowering testosterone levels, reducing sperm production, and causing impotence. The latter two factors are also associated with testicular germ cell cancer.

Daling and colleagues questioned 369 men (ages 18–44 years) with testicular germ cell cancer and 979 age-matched controls on their marijuana use.

The authors found that men diagnosed with testicular cancer were 70% more likely to be current marijuana users than were healthy controls. Marijuana use was associated with a high incidence of non-seminoma or mixed-histology carcinoma. Regular marijuana users and/or those who had long-term exposure to the substance (beginning before the age of 18 years) were at an elevated risk of being diagnosed with testicular cancer. “The relative risk associated with non-seminoma/mixed-histology testicular cancer for a frequent user (more than once per week) at diagnosis was threefold,” Daling said.

The mechanisms involved in the observed association were not determined in the present study; however, the authors speculate that, during puberty, men are more vulnerable to environmental factors that can increase the risk of testicular cancer, such as smoking marijuana. “Further research is needed to substantiate this finding as

well as laboratory studies to assess the role of cannabinoid receptors and endocannabinoid signaling in testicular cancer,” Daling concludes.

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Original article Daling, J. R. *et al.* Association of marijuana use and the incidence of testicular germ cell tumors. *Cancer* doi:10.1002/cnccr.24159 (2009).