PROSTATE CANCER

Cardiovascular risk and androgen deprivation therapy

A new population-based cohort study reported in *European Urology* has found that men with prostate cancer receiving androgen deprivation therapy (ADT) are at increased risk of stroke or transient ischemic attack. By contrast, a systematic review and meta-analysis newly reported in *JAMA* has found that patients who receive ADT are at no greater risk of cardiovascular death than patients who do not. These conflicting findings contribute to the growing bank of studies on this controversial subject.

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The first study, by Azoulay and colleagues, examined data collected from a cohort of more than 20,000 men with prostate cancer, with up to ten controls matched to each patient according to age,

duration of follow-up and cohort entry year. They found that men who received various ADT regimens—including gonadotropin-releasing hormone (GnRH) agonists and oral antiandrogens—were at an increased risk of stroke compared to men who were not treated with ADT.

The second study, a systematic review and meta-analysis of eight multicenter, randomized phase III clinical trials, reviewed data from over 4,000 patients with either nonmetastatic prostate cancer or non-hormone-refractory disease. In the analysis, the relative risk of cardiovascular death between patients who received ADT (predominantly GnRH agonists) and those who did not was not significant (RR 0.93; 95% CI 0.79–1.10; $P=0.41$). Additionally, the authors were unable to identify a subgroup of patients in whom ADT was associated with an increased risk of cardiovascular death.

The differences in study type, number of patients and end points might explain these differences. However, the link between ADT and cardiovascular risk has

been investigated intensively for the past several years, without a definitive answer emerging. Regardless, doubt surrounding the cardiovascular safety of ADT drugs, such as GnRH agonists, has prompted the FDA to ask that drug manufacturers include additional warning of the potential hazards to users on the drug label.

What is clear from these studies is that clinicians should carefully consider a range of factors before prescribing ADT to patients. These factors might include previous cardiovascular disease (including hypertension), age, other comorbidities and whether ADT is taken in conjunction with other therapeutic strategies, such as radiotherapy.

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Original articles Azoulay, L. *et al.* Androgen-deprivation therapy and the risk of stroke in patients with prostate cancer. *Eur. Urol.* doi:10.1016/j.eururo.2011.08.041 | Nguyen, P. L. *et al.* Association of androgen deprivation therapy with cardiovascular death in patients with prostate cancer. *JAMA* doi:10.1001/jama.2011.1745