Cardiovascular Risk in Testicular Cancer Survivors Treated With Chemotherapy: Incidence, Significance, and Practice Implications

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Purpose/Objectives: To explore what is known regarding cardiovascular late effects of treatment, such as Raynaud phenomenon, hypertension, hyperlipidemia, and coronary artery disease as well as the risk for cardiovascular events experienced by patients with testicular cancer treated with chemotherapy.

Data Sources: Literature review of treatment options and cardiovascular risk in patients with testicular cancer from PubMed, MEDLINE®, oncology nursing literature, and the Internet.

Data Synthesis: Evidence exists that chemotherapy used to treat testicular cancer may increase risk of cardiovascular disease. More research is needed to clarify the risks further. Patients and their healthcare providers must be aware of the potential toxicities.

Conclusions: A limited but growing body of research is focused on defining cardiovascular risks in this population.

Implications for Nursing: Nurses have an important role in exploring and identifying cardiovascular risk factors in patients, furthering research to clarify the risks, and using the knowledge to improve patient care and education.

Testicular cancer is the most common cancer in young men, generally affecting those aged 15–35 years. The greatest incidence is found in Europe and North America. For reasons that remain unclear, the incidence has been increasing since the 1960s (Chaudhary & Haldas, 2003; Dodd & Kelly, 2001). In 2005, about 8,010 men in the United States will be diagnosed with the disease, but only 390 are expected to die from cancer (Jemal et al., 2005).

Testicular cancer, a germ cell tumor, has been identified as one of the most curable malignancies. It has been described as a "model for a curable neoplasm" (Einhorn, 1981, p. 3275). Even in patients with metastatic disease, as many as 80% can be expected to achieve durable complete remission. Patients with testicular cancer are relatively young at diagnosis, and treatment is highly effective. Consequently, patients can expect to live many more years as cancer survivors; therefore, late effects of treatment become an increasingly important issue (Bokemeyer, Berger, Kuczyk, & Schmoll, 1996; Vaughn, Gignac, & Meadows, 2002).

Late effects of treatment are a new area of clinical focus and research for this population. Long-term toxicities of chemotherapy for testicular cancer survivors include secondary cancers, infertility, nephrotoxicity, neurotoxicity, pulmonary

Key Points . . .

- Testicular cancer is the most common cancer affecting young men.
- Cisplatin-based, combination chemotherapy is largely responsible for long-term survival; however, it also may be responsible for significant cardiovascular morbidity and mortality.
- The vast majority of testicular cancer survivors live for many years, and understanding potential long-term toxicity related to treatment is critically important for such men.

Goal for CE Enrollees:

To enhance the nurse's knowledge regarding the cardiovascular risks associated with testicular cancer.

Objectives for CE Enrollees:

1. Describe the long-term cardiovascular risks associated with testicular cancer.
2. Identify treatment protocols that may put patients at greater risk for the development of long-term cardiovascular health risks.
3. Identify signs and symptoms that are associated with cardiovascular late effects that may be expected in the testicular cancer population.

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