

Publishing in **Cancer** Impact Factor of **5.238***
*2008 ISI Journal Citation Reports



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Published Online: 11 Mar 2010

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Original Article

Long-term neurologic and peripheral vascular toxicity after chemotherapy treatment of testicular cancer[†]

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[†] This work was undertaken in The Royal Marsden National Health Service (NHS) Foundation Trust, which received a proportion of its funding from the NHS Executive. The views expressed in this publication are those of the authors and not necessarily those of the NHS Executive.

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KEYWORDS

testicular cancer • late treatment toxicity • chemotherapy • quality of life • cisplatin • carboplatin • bleomycin • vincristine

ABSTRACT

BACKGROUND:

Testicular cancer is curable in the majority of men, and persisting treatment toxicity is a concern. The authors report a cross-sectional study of the long-term effects of chemotherapy (C) on neurologic function and development of Raynaud phenomenon.

METHODS:

Seven hundred thirty-nine patients who were treated between 1982 and 1992 gave consent to enter the study. Patients were classified according to the receipt of C (n = 384) or no C (n = 355). Patients completed a general health questionnaire and a quality-of-life form (the European Organization for Research and Treatment of Cancer Quality-of-Life C30 questionnaire with testicular module). Symptom scores of 3 or 4 were considered clinically significant. Patients were assessed in the clinic, and clinical history was used to diagnose Raynaud phenomenon (RP) and tinnitus. Examinations included peripheral nerve function testing for light touch and vibration sense. Five hundred seventy-seven patients underwent audiometry.

RESULTS:

On physician assessment, peripheral neuropathy and RP were more common after C (21.7% vs 9.1% [$P < .001$] and 20.3% vs 1.7% [$P < .001$], respectively). Similar results were obtained for symptom scores (12.5% vs 5.5% [$P = .002$] and 9.7% vs 3.7% [$P < .001$], respectively). On multivariate analysis, for peripheral neuropathy, the significant predictors were cisplatin dose, carboplatin dose, and age. For RP, the significant predictor was bleomycin. Significant differences in hearing thresholds were noted at 8000 hertz only and, on multivariate analysis, were related to age, cisplatin dose, and vincristine dose. Auditory symptom scores did not differ between groups.

CONCLUSIONS:

With long-term follow-up, peripheral neuropathy and RP remained detectable in approximately 20% of patients and caused significant symptoms in 10% of patients. Detectable effects on high frequency remained but caused little symptomatic problem. These effects persisted and were related to the cumulative chemotherapy dose. Cancer 2010. © 2010 American Cancer Society.

Received: 4 May 2009; Revised: 28 July 2009; Accepted: 24 August 2009

DIGITAL OBJECT IDENTIFIER (DOI)

10.1002/cncr.24981 [About DOI](#)

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