

## Testicular cancer survivors at risk of effective treatment

Testicular cancer survivors can face an increased risk of long-term illness, not because of the malignancy, but the highly effective treatment they receive, according to a study in the urology journal *BJUI*.

Researchers from the Norwegian Radium Hospital at the University of Oslo found that the number of problems faced by survivors are higher than generally thought, because clinicians only report those that are life-threatening or require medical intervention. Awareness of this discrepancy has led to a greater focus on patient-reported outcomes.

The research review, part of a November *BJUI* special issue on testicular cancer, shows that as many as a quarter of survivors develop long-term neurological, hearing and circulation problems and they are twice as likely to develop a secondary cancer. On a more positive note, up to 80% who attempt to become fathers after treatment are successful.

### Considerable mental stress possible

"Patients can suffer considerable mental distress after having one testicle removed due to cancer, but this gradually decreases with treatment" says lead author Professor Sophie D Fossa.

"Gastrointestinal side-effects are common during both chemotherapy and radiotherapy and chemotherapy carries added risks like infections and blood clots. Long-term problems include secondary cancers, heart problems, and conditions related to lower hormone levels.

"We believe that the best way to reduce the short and long-term health of survivors is to reduce the risk, by smoking cessation, physical activity and weight reduction, and to provide adequate follow-up for patients who could develop life-threatening toxicity."

Key findings from the review, which covered 40 studies published between 1990 and 2008, included:

- About 80% of men who have one testicle removed continue to produce sperm, often at reduced levels, and although men are advised to freeze their semen before treatment, less than 10% use their frozen samples later on.
- Pulmonary complications can arise in men who receive the drug bleomycin before larger surgical procedures, particularly if they are aged 40 or over.
- Radiotherapy can cause short-term nausea, vomiting and lethargy, but side-effects tend to decrease two to four weeks after therapy.
- Cisplatin-based chemotherapy can damage the sensory nerves in 10 to 30% of patients and 20% of survivors complain of impaired hearing and tinnitus.
- Most acute drug toxicity problems tend to resolve themselves, or decrease, in the first year, but long-term problems pose greater issues. Despite this, many patients are only monitored by their consultant for five to ten years, after which they may or may not be regularly seen by primary care professionals.
- Survivors are up to 1.8 times more likely to develop a secondary cancer, particularly solid malignancies below the diaphragm. The introduction of cisplatin-based chemotherapy, and a gradual reduction in radiotherapy, does not appear to have reduced the secondary cancer risk. But it appears to reduce the risk

of cancer developing in the remaining testicle.

- Avoiding mediastinal radiotherapy has reduced the risk of chronic heart complications, but death rates are still slightly increased by infra-diaphragmatic radiotherapy. In addition, the chemotherapy drug cisplatin can cause inflammation of the endothelial cells, leading to premature thickening of the coronary arteries.
- About 20% of survivors have already suffered irreversible hypogonadism, where the testes produce little or no sex hormone, and reduced fertility before their cancer is diagnosed.
- Removal of lymph nodes in the abdomen can lead to dry ejaculation in some patients and infra-diaphragmatic radiotherapy and chemotherapy can cause temporary reductions in fertility.
- Surprisingly, survivors report similar health-related quality of life to age-matched controls. However these measures do not cover body image and masculinity, issues that have been inadequately researched. It is suggested that survivors adapt to their new situation and take their cancer into account when rating their quality of life.
- Anxiety levels are increased and are significantly associated with young age, peripheral neuropathy, economic problems, alcohol problems, sexual problems, fear of recurrence and having been treated for mental problems. Findings on depression are contradictory, but links between higher levels of depression and unhealthy lifestyles, particularly smoking, need urgent investigation.
- About 17% of survivors suffer chronic fatigue, almost twice the normal population, and this is associated with a wide range of factors, including older age, greater economic and sexual problems and poorer physical and mental health.
- Sexual functioning is similar to age-matched controls, possibly because survivors adapt to their post-cancer life. However survivors who have had the lymph nodes removed in their abdomen can experience more ejaculation problems.
- Work is important for survivors' health-related quality of life and, at least in Norway, they have the same living conditions, job stress and work engagement as age-matched controls, despite their poorer physical work ability.

"Current patients with testicular cancer should be informed about the risk of short-term and particularly long-term side-effects of their highly effective treatment" concludes Professor Fossa.

Source: Wiley-Blackwell