

the ^{223}Ra group compared with the placebo group (-65.6% [95% CI -69.5 to -57.7] versus 9.3% [3.8–60.9]; $P < 0.0001$). Efficacy data up to 24 months indicated that ^{223}Ra treatment extended the median time to first skeletal-related event (such as pathological bone fracture) and the time to prostate-specific-antigen progression. Importantly, ^{223}Ra was well tolerated and had minimum myelotoxic effects, therefore, the authors suggest that the dose could potentially be increased.

Large clinical trials are required to confirm the encouraging findings of this small study.

Original article Nilsson S *et al.* (2007) Bone-targeted radium-223 in symptomatic, hormone-refractory prostate cancer: a randomized, multicentre, placebo-controlled phase II study. *Lancet Oncol* 8: 587–594

Triad of pathological factors for assessing the prognosis of patients with RCC

A group of Brazilian researchers have identified a triad of pathological features to be used in the prognostic evaluation of patients with renal cell carcinoma (RCC).

Because of the variable natural history of RCC, the clinical outcome of patients with this disease can be difficult to predict. In light of recent developments in our knowledge of RCC, there is a need for new algorithms to help clinicians to improve patient care.

Dall'Oglio and colleagues from the University of São Paulo retrospectively analyzed data from 230 patients who were surgically treated for non-metastatic RCC (stages T1–4 Nx M0) at their institution between 1988 and 2003. Patients underwent either open radical nephrectomy or conservative surgery. Pathological analysis of tumor specimens was performed by a single pathologist.

Univariate and multivariate analyses were used to determine the prognostic impact of clinical presentation, histological type, Fuhrman grade, tumor size, lymph node involvement, and the presence of microvascular invasion on clinical outcomes, and to stratify patients according to risk of progression.

Median follow-up was 48 months (range 3–140 months). The recurrence and cancer-specific mortality rates were 17% and 13%, respectively. Tumor grade, tumor size, and microvascular invasion were the only independent

predictors of survival on multivariate analysis. Disease-free survival was 94.7%, 56.8% and 13.1%, and cancer-specific survival was 94.7%, 61.7% and 32.0%, for low, intermediate, and high-risk tumors, respectively.

These findings might help clinicians to tailor treatment to individual patients.

Original article Dall'Oglio MF *et al.* (2007) Microvascular tumor invasion, tumor size and Fuhrman grade: a pathological triad for prognostic evaluation of renal cell carcinoma. *J Urol* 178: 425–428

Cryopreservation of sperm is effective in young adult male cancer patients

Current gonadotoxic treatment regimens for adolescents and young males with cancer can compromise future fertility. Banking of semen before treatment is one solution to this problem. Neal and colleagues investigated the efficacy of cryopreservation of sperm from young males with cancer and pregnancy outcomes over a 10-year period.

This retrospective review of andrology, fertility and clinical features included all males under the age of 30 years who had banked their sperm at a single institution in Canada between 1995 and 2005. Before cryopreservation, the semen was analyzed, and after obtaining informed consent, was frozen and stored in liquid nitrogen. Patients who used their semen samples for assisted reproduction were also analyzed for pregnancy outcomes.

In total, 821 patients aged between 14 and 30 years were newly diagnosed with cancer during the time period and 146 had their semen cryopreserved. In all, 21 patients used their cryopreserved sperm to achieve conception using assisted reproduction and 4 patients actually achieved pregnancy with intrauterine insemination. Patients who used *in vitro* fertilization and intracytoplasmic sperm injection techniques had a 50% pregnancy rate.

The authors conclude that semen cryopreservation is an effective technique for fertility preservation in young adult male cancer patients before they undergo gonadotoxic treatment. Sperm banking is currently underused and awareness needs to be generated by experts.

Original article Neal MS *et al.* (2007) Effectiveness of sperm banking in adolescents and young adults with cancer. *Cancer* 110: 1125–1129