GLOSSARY

TUMOR LYSIS SYNDROME (TLS)
The metabolic consequences of rapid tumor-cell destruction during cytoreductive therapy, including hyperuricemia, hyperphosphatemia, hypocalcemia, and hyperkalemia, which can lead to acute renal failure, myocardial instability, and death

Polymorphisms in *IGF1* associated with an increased risk of prostate cancer

Inherited variations in the insulin-like growth factor 1 (*IGF1*) gene could be associated with an increased risk of prostate cancer, says a study published in the *Journal of the National Cancer Institute*. The authors believe this to be the first study to systematically examine the relationship between *IGF1* variation and risk of prostate cancer in a large multiethnic case–control population—the study included 2,320 prostate cancer patients and 2,290 matched controls without prostate cancer.

Through a series of analyses of the *IGF1* gene and its single-nucleotide polymorphisms (SNPs), the authors identified several *IGF1* SNPs and haplotypes that were associated with increased prostate cancer risk. Seventeen SNPs were nominally significantly associated with risk of prostate cancer ($P_{trend} = 0.002–0.05$). The two most important polymorphisms were perfectly correlated with each other and are therefore genetically redundant. It was estimated that roughly 10% of the cases in this study could be attributed to carrying the SNP4 variant. Through subgroup analyses, the authors observed that the genetic effects identified in the study were consistent between different ethnic groups.

These results bolster previous observations of a link between IGF1 and development of prostate cancer. Although the authors acknowledge some limitations to the study, it provides an important foundation for further research into the influence of the *IGF1* gene on circulating IGF1 levels, and the relationship between *IGF1* variation and other genetic and environmental factors.

Pippa Murdie

Original article Cheng I *et al.* (2006) Common genetic variation in IGF1 and prostate cancer risk in the Multiethnic Cohort. *J Natl Cancer Inst* **98:** 123–134

A novel predictive model for tumor lysis syndrome

Researchers from the USA have developed the first predictive model for TUMOR LYSIS SYNDROME (TLS) in patients undergoing induction chemotherapy for acute myelogenous leukemia (AML) or myelodysplastic syndrome. The Penn Predictive Score of Tumor Lysis Syndrome (PPS-TLS) was designed as part of a retrospective cohort study of 194 patients treated for AML or myelodysplastic syndrome at the Hospital of the University of Pennsylvania.

Patients received one of a range of induction chemotherapy regimens in combination with standard TLS prophylaxis. Blood chemistry analysis was carried out frequently both prior to chemotherapy and during the week following completion of treatment. TLS was defined as either a doubling of baseline creatinine with elevation of phosphate, uric acid or potassium, or stable creatinine with an increase in the level of two of these electrolytes. TLS developed in 19 (9.8%) patients, 6 with doubling creatinine and 13 with stable creatinine. Univariate analysis revealed the following six prognostic indicators of TLS: elevated baseline creatinine, uric acid, lactate dehydrogenase or white blood cell count; male sex; and history of chronic myelomonocytic leukemia. In the multivariate analysis, three factors remained significant predictors of TLS: lactate dehydrogenase ($P = 0.0042$), uric acid ($P = 0.0001$), and male sex ($P = 0.0073$). The PPS-TLS model was devised using these three prognostic indicators, with cumulative scores ranging from 0–10 indicating increasing risk of TLS.

The authors conclude that this work could lay the foundation upon which evidence-based guidelines for monitoring TLS in this patient population could be based.

Alexandra King

Original article Mato AR *et al.* (2006) A predictive model for the detection of tumor lysis syndrome during AML induction therapy. *Leuk Lymphoma* doi: 10.1080/10428190500404662]

White blood cell counts predict the incidence of cancer-related mortality

Inflammation is linked to the development and progression of some types of cancer. Raised white blood cell (WBC) counts can indicate systemic inflammation; however, it is not known whether an increased number of circulating WBCs can predict subsequent cancer mortality. Shankar *et al*. investigated the association between high WBC counts and the risk of cancer-related mortality.

In this Australian prospective population-based study of 3,189 individuals aged