Specific and sensitive detection of prostate cancer using urine sediment DNA

Treatment of prostate cancer can be curative but depends on early detection. Although prostate-specific antigen (PSA) is widely regarded as one of the best serum tumor markers, PSA level alone is neither sensitive nor specific enough for a definitive diagnosis, and transrectal biopsies are needed to confirm prostate cancer. A recent study has demonstrated that the detection of aberrant promoter methylation using quantitative methylation-specific polymerase chain reaction (QMSP) in urine sediment DNA offers potential as a specific, sensitive and noninvasive test for prostate cancer.

Hoque and colleagues used QMSP to detect aberrant methylation of 9 gene promoters in urine sediment DNA from 52 prostate cancer patients and 91 normal, age-matched controls. Promoter hypermethylation of at least one gene was seen in all prostate cancer samples. No methylation of *p16*, *ARF*, *MGMT* or *GSTP1* was seen in matched controls, although low levels were detected for the other promoters tested. Based on these data, the authors conclude that testing for aberrant methylation of *p16*, *ARF*, *MGMT* and *GSTP1* using QMSP would theoretically allow for the detection of 87% of all prostate cancers with 100% specificity.

Detection of aberrant methylation in urine DNA offers a simple, readily automated, non-invasive means of detecting and monitoring prostate cancer. Using carefully selected methylation markers, the technique might also be useful for the detection of other urologic tumors that contribute cellular DNA to urine sediment.

Carol Lovegrove

Original article Hoque M O *et al.* (2005) Quantitative methylation-specific polymerase chain reaction gene patterns in urine sediment distinguish prostate cancer patients from control subjects. *J Clin Oncol* **23:** 6560–6575

Involved-field radiotherapy: a potential standard therapy for early stage LPHL

There have been very few clinical studies of patients with early-stage lymphocyte-predominant Hodgkin's lymphoma (LPHL), because of the low incidence of this malignancy. Therefore, to date, no standard treatment has been established; therapeutic options include extended-field (EF) and involved-field (IF) radiotherapy, and combined modality (CM) approaches. In response to this lack of standard treatment, the German Hodgkin Study Group has recently published a retrospective analysis of its response, survival, and toxicity data for different treatment options in patients with stage IA LPHL without risk factors.

Data on 131 patients who had received EF ($n = 45$), IF ($n = 45$), or CM treatment (2–4 × ABVD + EF/IF; $n = 41$) were included in this analysis. A complete response (CR) to therapy was achieved by 99% of all patients. CR rates were comparable across all three regimens: 98%, 100%, and 98% for EF, IF, and CM, respectively. After a median follow-up of 43 months for all patients, overall survival and freedom from treatment failure rates were 99% and 95%, respectively. Toxicity was higher in patients who received CM (39% WHO grade 3 and 9.8% WHO grade 4) than in those who underwent EF or IF (2.2% WHO grade 3 only). The authors assert that, based on these data, IF radiotherapy could emerge as the treatment of choice for early stage LPHL, but caution that longer follow-up is required before this therapy can be adopted as standard.

Alexandra King

Original article Nogová L *et al.* (2005) Extended field radiotherapy, combined modality treatment or involved field radiotherapy for patients with stage IA lymphocyte-predominant Hodgkin's lymphoma: a retrospective analysis from the German Hodgkin Study Group (GHSG). *Ann Oncol* **16:** 1683–1687

GLOSSARY

ABVD
A chemotherapy regimen comprising doxorubicin, bleomycin, vinblastine, and dacarbazine

Decreased dissemination and increased transgene expression using novel viral gene delivery

Intratumor injection of viral vectors is the most commonly used system for gene delivery in clinical trials of cancer therapies. Dissemination from the targeted tumor into the surrounding tissues remains a potential problem, however, and can result in reduced efficacy : toxicity ratios.

In an effort to overcome this limitation, Wang and colleagues developed a novel method based on a delivery system incorporating a biocompatible polymer (poloxamer 407), which increases the viscosity of the virus suspension when the medium is warmed from 4°C to 37°C. This technique significantly