in twelve patients and remained stable in a further nine. Changes in oxygenation were not associated with baseline tumor characteristics, prostate-specific antigen level or duration of bicalutamide treatment.

The authors conclude that induced improvements in levels of hypoxia might explain the favorable patient outcomes observed after treatment with androgen withdrawal plus radiotherapy. Therapeutic agents that block the response to hypoxia might be useful for treating and preventing prostate cancer.

Original article Milosevic M *et al.* (2007) Androgen withdrawal in patients reduces prostate cancer hypoxia: implications for disease progression and radiation response. *Cancer Res* **67:** 6022–6025

Infection with cagA-positive *H. pylori* strains is associated with gastric carcinoma risk

Infection with *Helicobacter pylori* is known to be associated with an increased risk of gastric adenocarcinoma. Nevertheless, it is rare for gastric adenocarcinoma to develop in response to *H. pylori* infection; persistent infection more usually causes gastritis, peptic ulcer disease or atrophic gastritis. The factors that determine the link between infection and risk of gastric cancer are complex and not well understood, possibly relating to both the genetic background of the individual, and to the genetic variation of *H. pylori*.

Strains of *H. pylori* that carry the cytotoxin-associated (*cagA*) gene are more virulent and cause infections that are more likely to lead to atrophic gastritis and gastric cancer. In this study, Plummer *et al.* investigated the relationship between cagA-positive *H. pylori* infection and the degree of change observed in the gastric mucosa in samples of precancerous lesions of the stomach. These precancerous samples were collected from 2,145 patients as part of a chemoprevention trial in Venezuela, a region where *H. pylori* infection is common.

Analyses of samples taken at enrollment showed that dysplasia was markedly more common in patients infected with cagA-positive *H. pylori* than in those infected with cagA-negative strains. Individuals in the cagA-positive group were also more likely to experience progression of their precancerous lesion and were less likely to experience regression. The authors conclude that infection with cagA-positive strains of *H. pylori* could be a strong predisposing factor for the development of gastric adenocarcinoma.

Original article Plummer M *et al.* (2007) *Helicobacter pylori* cytotoxin-associated genotype and gastric precancerous lesions. *J Natl Cancer Inst* **99:** 1328–1334

Bevacizumab plus chemotherapy increases risk of arterial thromboembolism

The combination of bevacizumab and chemotherapy has been shown to improve survival in patients with various metastatic carcinomas; however, trials have reported an increased occurrence of arterial thromboembolism (ATE) in patients receiving this combination. A study by Scappaticci *et al.* has determined the risk of ATE versus venous thromboembolism (VTE) in patients treated with bevacizumab and chemotherapy.

This retrospective study analyzed the results of five randomized controlled trials that included 1,745 patients with metastatic breast, colorectal, or non-small-cell lung cancer. Of these patients, 963 received bevacizumab plus chemotherapy (group A) and 782 received chemotherapy only (group B). The incidence of ATE was higher in group A than group B (hazard ratio 2.0; $P = 0.031$), but the development of VTE was not significantly associated with bevacizumab administration (hazard ratio 0.89; $P = 0.44$). The absolute rates of developing an ATE per 100 person-years of exposure were 5.5 and 3.1 events for groups A and B, respectively (rate ratio 1.8; $P = 0.076$). Incidence of ATE events was associated with exposure to bevacizumab ($P = 0.04$), prior ATE event ($P < 0.001$), and age 65 years or older ($P = 0.01$). Some patients in these trials also received low-dose aspirin; use of this agent was associated with moderate increases in grade 3 and 4 bleeding events in both treatment groups (from 3.6% to 4.7% in group A, and from 1.7% to 2.2% in group B).

This study shows that bevacizumab in combination with chemotherapy increases the risk of ATE but not VTE in patients with metastatic cancer.

Original article Scappaticci FA *et al.* (2007) Arterial thromboembolic events in patients with metastatic carcinoma treated with chemotherapy and bevacizumab. *J Natl Cancer Inst* **99:** 1232–1239