cancer in the different groups (although a low level of education was associated with increased risk of lung cancer regardless of smoking habits). Possible explanations for the differences seen include variation in the metabolism of nicotine or susceptibility to tobacco carcinogen effects between different racial/ethnic groups, and additional differences in smoking behavior between the groups. Further study into these areas is needed.

Pippa Murdie

Original article Haiman CA *et al.* (2006) Ethnic and racial differences in the smoking-related risk of lung cancer. *N Engl J Med* 354: 333–342

Autoimmunity is associated with improved survival during interferon therapy for melanoma

Autoimmune manifestations of immunotherapies for cancer have been well documented and are associated with improved outcome. Gogas and coauthors have conducted the first prospective analysis of autoimmunity in patients receiving adjuvant interferon (IFN)- $\alpha 2\beta$ therapy for melanoma. This study was part of a larger multicenter, randomized, phase III trial by the Hellenic Oncology Group.

Patients with surgically resected AJCC stage IIB, IIC, or III melanoma were randomized to receive induction therapy with IFN- $\alpha 2\beta$ for 4 weeks followed by either observation or maintenance IFN for 48 weeks. Blood samples were tested for antinuclear, anti-DNA, antithyroglobulin, antimicrosomal, and anticardiolipin antibodies before treatment, after induction therapy, and at 3, 6, 9 and 12 months. Patients were also examined for manifestations of autoimmunity, such as vitiligo.

Approximately a quarter of all patients displayed evidence of autoimmunity. Autoantibodies were detected in 23/96 (24%) patients who received induction therapy alone and 29/104 (28%) patients who underwent induction plus maintenance IFN. After a median follow-up of 45.6 months, 13% of patients with evidence of autoimmunity had suffered a recurrence, compared with 73% in patients with no evidence of autoimmunity. At last follow-up, the death rates for these two groups were 4% and 54%, respectively. In both the univariate and multivariate analyses, autoimmunity was significantly associated with extended

relapse-free survival and overall survival ($P=0.001$). The authors conclude that autoimmunity is a significant prognostic indicator in patients receiving IFN- $\alpha 2\beta$ for melanoma and that the manifestations of autoimmunity could be used to measure the activity of IFN therapy in these patients.

Alexandra King

Original article Gogas H *et al.* (2006) Prognostic significance of autoimmunity during treatment of melanoma with interferon. *N Engl J Med* 354: 709–718

Identification of genetic anticipation in familial pancreatic cancer

Genetic anticipation is a phenomenon whereby hereditary disease onset occurs at an earlier age in successive generations. Understanding genetic anticipation in familial pancreatic cancer could provide insight into the genes responsible for this disease, improve linkage analysis and prediction of disease occurrence. Studies on anticipation in familial pancreatic cancer have been small and subject to bias; therefore, McFaul *et al.* used a large study population of at-risk individuals, and standard and novel analytical methods that reduce biases, to investigate whether anticipation occurs in this disease.

Three generations of at-risk individuals ($n=1,223$) from 106 European families were included in the study. Pancreatic cancer was identified in 53 people in the latest generation (>39 years, defined as G3) and in 158 and 50 people in the successive preceding two generations (defined as G2 and G1, respectively). The median age at death from pancreatic cancer was 49 years, 64 years and 70 years for those in G3, G2 and G1 generations, respectively. As with previous studies, statistical analysis to correct for bias showed significant anticipation in familial pancreatic cancer ($P=0.002$). This finding was confirmed by more-rigorous testing using a novel iterative approach.

The results of this study provide the first robust evidence for genetic anticipation in familial pancreatic cancer and the authors stress that these findings have immediate implications for screening and genetic counseling of high-risk individuals.

Kate Matthews

Original article McFaul CD *et al.* (2006) Anticipation in familial pancreatic cancer. *Gut* 55: 252–258