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IN BRIEF

PROSTATE CANCER

AR mutations in plasma DNA indicate outcomes

An urgent need exists for predictive biomarkers that can be sampled noninvasively in men with prostate cancer. Towards this goal, an analysis of androgen receptor (*AR*) gene status was conducted using plasma DNA samples from androgen-deprivation therapy (ADT)-naive patients receiving ADT with either abiraterone or enzalutamide as part of one of three clinical trials. Statistically significant associations between both gain in *AR* copy number, or the presence of one of several *AR* mutations and inferior overall survival and progression-free survival outcomes were observed, relative to those of patients with wild-type *AR*. Peripheral blood samples were taken within 30 days of initiation of treatment and, therefore, most likely reflect pre-existing genetic alterations, rather than the effects of treatment. These findings indicate that *AR*-mutation status in plasma DNA samples can be monitored to predict treatment outcomes.

ORIGINAL ARTICLE Conteduca V. *et al.* Androgen receptor gene status in plasma DNA associates with worse outcome on enzalutamide or abiraterone for castration-resistant prostate cancer: a multi-institution correlative biomarker study. *Ann. Oncol.* http://dx.doi.org/10.1093/annonc/mdx155 (2017)

HAEMATOLOGICAL CANCER

Pembrolizumab is effective in multiple myeloma

Newly published data from a phase II study involving patients with relapsed and/or refractory multiple myeloma (RRMM) indicate that the anti-programmed cell death protein 1 (PD-1) antibody pembrolizumab can enhance the efficacy of pomalidomide plus dexamethasone. A total of 48 patients were included in this study, of whom 73% were refractory to both an immunomodulatory agent and a proteasome inhibitor, and 70% had undergone prior autologous stem-cell transplantation. An objective response was observed in 60% of patients, with a median response duration of 14.7 months, and a progression-free survival duration of 17.4 months. Grade 3–4 adverse events were reported in 40% of patients, of which haematological toxicities, hyperglycaemia and pneumonia were the most abundant. These findings indicate that pembrolizumab, in combination with dexamethasone and pomalidomide, is safe and effective in patients with RRMM.

ORIGINAL ARTICLE Badros, A. *et al.* Pembrolizumab, pomalidomide and low dose dexamethasone for relapsed/refractory multiple myeloma. *Blood* http://dx.doi.org/10.1182/blood-2017-03-775122 (2017)

SKIN CANCER

Mutational landscape of melanoma revealed

Most cutaneous melanomas have a distinct, UV-radiation-induced mutational signature, which is dominated by C>T nucleotide transitions. However, the mutational landscape of melanomas ocurring at ocular, acral, and mucosal surfaces remains less well understood. Now, a high-coverage whole-genome sequencing study has revealed that the noncutaneous subtypes of melanoma arise from diverse, often non-UV-associated carcinogenic processes. *TERT* promoter mutations were the most frequently observed alterations, with driver mutations in *TP53*, *PTEN*, or *RB1* identified in subsets of patients with acral or mucosal melanomas. The majority of samples contained actionable mutations, including in componentsof the MAPK or PI3K pathways. These findings highlight the genetic diversity among different forms of melanoma, and reveal several potential therapeutic targets.

ORIGINAL ARTICLE Hayward, N. K. *et al.* Whole-genome landscapes of major melanoma subtypes. *Nature* http://dx.doi.org/10.1038/nature22071 (2017)