Nature Reviews Clinical Oncology | Published online 6 Feb 2018

IN BRIEF

HAEMATOLOGICAL CANCER

Blinatumomab facilitates complete responses

In patients with acute lymphoblastic leukaemia (ALL) who achieve haematological complete remission, the presence of minimal residual disease (MRD) enables the prediction of disease relapse. In an open-label single-arm study, 113 adults with B cell ALL received up to four cycles of blinatumomab, a bispecific T cell-engager antibody construct that directs T cells to CD19-positive cells. Patients could undergo allogeneic haematopoietic stem cell transplantation any time after cycle 1. A complete MRD response, the primary end point, was achieved in 78% of the patients, who had longer relapse-free survival and overall survival durations than those who did not achieve a complete MRD response: 23.6 months and 38.9 months, respectively, versus 5.7 months and 12.5 months. Grade 3 and 4 neurological adverse events were reported in 10% and 3% of patients, respectively, and cytokine-release syndrome in 3%.

ORIGINAL ARTICLE Gökbuget, N. *et al.* Blinatumomab for minimal residual disease in adults with B-precursor acute lymphoblastic leukemia. *Blood* https://doi.org/10.1182/blood-2017-08-798322 (2018)

HAEMATOLOGICAL CANCER

Dasatinib regulates immune cell function

In the D-first trial, conducted in Japan, 52 patients with newly diagnosed chronic myeloid leukaemia (CML) received the tyrosine kinase inhibitor dasatinib and were monitored for at least 36 months. The cumulative deep molecular response (DMR) rate at 36 months was 65%, and the 3-year overall survival was 96%. T cell counts were stable in these patients over time, but the number of regulatory T (T_{reg}) cells decreased. Moreover, the number and degree of differentiation of natural killer (NK) cells, and the number of cytotoxic T cells were inversely correlated with that of T_{reg} cells. The DMR rate at 12 months was <5.7% in patients with low T_{reg} cell counts, which was significantly more favourable than that of the other patients (odds ratio 4.07). These results suggest that dasatinib inhibits T_{reg} cell proliferation and function, leading to reduced suppression of the immune response, in particular, that dependent on NK cells.

ORIGINAL ARTICLE Najima, Y. *et al.* Regulatory T cell inhibition by dasatinib is associated with natural killer cell differentiation and a favorable molecular response — the final results of the D-first study. *Leuk. Res.* https://doi.org/10.1016/j.leukres.2018.01.010 (2018)

BREAST CANCER

Recurrent fusions in endocrine-resistant disease

In patients with advanced-stage breast cancer, recurrent genomic structural rearrangements can result in fusion proteins. To determine the role of genomic structural rearrangements in resistance to endocrine therapy, a retrospective analysis was conducted in samples derived from primary tumours and matched metastases of patients with metastatic oestrogen receptor (ER)-positive breast cancer. Among the genomic rearrangements affecting *ESR1*, which encodes the ER, events leading to the generation of nine ESR1 fusion proteins were identified as recurrent, albeit rare, events, present in at least 1% of metastatic ER-positive breast cancers. All fusions resulted in a breakpoint in or near *ESR1* intron 6, leading to a defective ligand binding domain, and probably reflect secondary resistance to endocrine therapy.

ORIGINAL ARTICLE Hartmaier, R. J. *et al.* Recurrent hyperactive ESR1 fusion proteins in endocrine therapy resistant breast cancer. *Ann. Oncol.* https://doi.org/10.1093/annonc/mdy025 (2018)