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IN BRIEF

GYNAECOLOGICAL CANCER

Olaparib is efficacious in patients with ovarian cancer

A randomized phase II trial confirmed the efficacy and acceptable tolerability of chemotherapy combined with the poly(ADP-ribose) polymerase inhibitor olaparib for the treatment of platinum-sensitive, recurrent, high-grade serous ovarian cancer. Median progression-free survival in 81 patients treated with olaparib, paclitaxel and carboplatin, followed by olaparib alone, was 12.2 months, compared with 9.6 months in 81 patients receiving initial chemotherapy, then no treatment. The survival benefit of olaparib treatment was greatest for patients with *BRCA1* or *BRCA2* mutations.

Original article Oza, A. M. *et al*. Olaparib combined with chemotherapy for recurrent platinum-sensitive ovarian cancer: a randomised phase 2 trial. *Lancet Oncol*. doi:10.1016/S1470-2045(14)71135-0

UROLOGICAL CANCER

Epigenetics in prostate cancer aggression and recurrence

Research into epigenetic alterations involved in prostate cancer has identified BAZ2A as a potential marker for disease aggression and metastasis. BAZ2A upregulation in prostate cancer is post-transcriptional, resulting from downregulation of microRNA-133a. In PC3 metastatic prostate cancer cells, *BAZ2A* knockdown impaired proliferation, viability, invasion and migration. BAZ2A and the simiiarly upregulated EZH2 coordinated a metastatic pattern of epigenetic gene silencing. In tissue microarray analyses, BAZ2A expression was an independent predictor of disease recurrence, notably in cases of intermediate-risk disease.

Original article Gu, L. *et al.* BAZ2A (TIP5) is involved in epigenetic alterations in prostate cancer and its overexpression predicts disease recurrence. *Nat. Genet.* doi:10.1038/ng.3165

HAEMATOLOGICAL CANCER

Chemotherapy induces clonal selection of *TP53* mutations

Therapy-related acute myeloid leukaemia (t-AML) is a complication of cytotoxic chemotherapy. New research suggests that *TP53* mutations are acquired by haematopoietic stem–progenitor cells (HSPCs) prior to chemotherapy, and are clonally selected by cytotoxic therapy, to initiate t-AML. Genome sequencing of 22 patients with t-AML showed no chemotherapy-related, genome-wide DNA damage. *TP53* mutations identified in t-AML were seen in samples banked prior to chemotherapy, and *TP53* mutations were also found in HSPCs in healthy individuals.

Original article Wong, T. N. *et al*. Role of *TP53* mutations in the origin and evolution of therapy-related acute myeloid leukaemia. *Nature* doi:10.1038/nature13968

UROLOGICAL CANCER

Overcoming bladder cancer chemoresistance

Activation of bladder cancer stem cells (CSCs) can drive progressive resistance to chemotherapy. Cytotoxic therapy is initially effective in debulking tumours, but it has now been shown that apoptosis promotes release of prostaglandin E_2 (PGE_2), which stimulates quiescent CSCs to divide, proliferate and repopulate the tumour. Inhibition of PGE_2 signalling blocks CSC repopulation, and attenuates progressive chemoresistance in xenograft tumours, and might represent a new treatment paradigm for patients with bladder cancer.

Original article Kurtova, A. V. *et al*. Blocking PGE2-induced tumour repopulation abrogates bladder cancer chemoresistance. *Nature* doi:10.1038/nature14034