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IN BRIEF

GASTROINTESTINAL CANCER

Adjuvant FOLFOX improves DFS in patients with rectal cancer

Although 5-fluorouracil (5-FU), leucovorin and oxaliplatin (FOLFOX) is a standard treatment for colon cancer, this regimen has never been tested in the adjuvant setting for locally advanced rectal cancer. In the ADORE multicentre, randomized, phase II study, patients with stage II/III rectal cancer following chemoradiotherapy treatment were randomly assigned to either 5-FU plus leucovorin or FOLFOX. The primary end point of disease-free survival (DFS) was achieved in significantly more patients treated with FOLFOX (71.6%) than those receiving 5-FU and leucovorin (62.9%). All-grade neutropenia, thrombocytopenia, fatigue, nausea and sensory neuropathy were more common after treatment with FOLFOX compared with 5-FU plus leucovorin. Thus, FOLFOX improves DFS in patients with locally advanced rectal cancer.

Original article Hong, Y. S. *et al*. Oxaliplatin, fluorouracil, and leucovorin versus fluorouracil and leucovorin as adjuvant chemotherapy for locally advanced rectal cancer after preoperative chemoradiotherapy (ADORE): an open-label, multicentre, phase 2, randomised controlled trial. *Lancet Oncol*. doi:10.1016/S1470-2045(14)70377-8

LUNG CANCER

Therapeutic targets in lung cancer microenvironment identified

The redundant and dynamic nature of signalling networks and their interactions within cancer cells and the microenvironment enables tumours to become resistant to therapy. Researchers used mass spectrometry-based chemical proteomics to comprehensively characterize drug–protein interactions in primary tissue specimens from patients with lung cancer treated with dasatinib and sunitinib. In excess of 100 targets were identified, and were compared between cell lines and mouse xenografts; most targets were shared between these samples, but several targets were present only in the tumour. Furthermore, most of the protein targets in xenografts were of mouse origin indicating they originated from the tumour microenvironment. Several pathways (MAPK and integrin signalling) were affected by both drugs in cancer cells as well as the microenvironment, highlighting that this approach might help to design novel anticancer therapies to target the microenvironment and tumour compartments.

Original article Gridling, M. *et al*. Identification of kinase inhibitor targets in the lung cancer microenvironment by chemical and phosphoproteomics. *Mol. Cancer Ther*. doi:10.1158/1535-7163.MCT-14-0152

UROLOGICAL CANCER

Notch pathway inactivation is a driver event in bladder cancer

Cell-fate interactions controlled by the Notch signalling pathway can affect proliferation, differentiation and apoptosis in a context-dependent manner. Notch pathway components are known to act as oncogenes or tumour suppressors in human cancers. Now, researchers report new inactivating mutations in the Notch pathway in over 40% of human bladder cancers. Notch activation can suppress cellular proliferation in bladder-cancer cells by direct upregulation of dual-specificity phosphatases, which in turn reduce ERK1 and ERK2 phosphorylation. Inactivation of Notch in mouse models led to Erk1/2 phosphorylation and tumorigenesis in the urinary tract. These results demonstrate that loss of Notch activity is a driving factor in bladder cancer.

Original article Rampias, T. *et al*. A new tumor suppressor role for the Notch pathway in bladder cancer. *Nat. Med*. doi:10.1038/nm.3678