Nature Reviews Clinical Oncology | Published online 15 Mar 2016

IN BRIEF

OVARIAN CANCER

Weekly or 3-weekly paclitaxel are equally effective

Patients with ovarian cancer typically receive paclitaxel plus carboplatin, and many are also treated with bevacizumab. Now, data from a randomized phase III trial comparing 3-weekly paclitaxel with a lower, weekly dose reveal no significant differences in progression-free survival (PFS) among newly-diagnosed patients with previously untreated ovarian cancer on either paclitaxel dosing schedule in combination with carboplatin and bevacizuab. However, among the 16% of patients who received carboplatin plus paclitaxel without bevacizumab, weekly paclitaxel resulted in significantly improved PFS. Patients receiving weekly paclitaxel had a higher incidence of grade ≥3 anaemia, and of grade 2–4 sensory neuropathy, with a lower incidence of grade 3–4 neutropenia. These changes in the incidences of adverse events were mirrored by a significant decrease in quality of life scores. Thus, in combination with bevacizumab and carboplatin, 3-weekly or weekly paclitaxel regimens are equally effective, although 3-weekly paclitaxel results in fewer adverse events.

ORIGINAL ARTICLE Chan, J. K. *et al.* Weekly vs every-3-week paclitaxel and carboplatin for ovarian cancer. *N. Engl. J. Med.* **374**, 738–748 (2016)

PROSTATE CANCER

Little intraindividual heterogeneity in metastases

Tumour heterogeneity, particularly among different metastases, has important consequences for anticancer drug resistance; however, findings of a genetic analysis of multiple metastases from men with metastatic prostate cancer reveal limited genetic diversity among metastases derived from the same patients, although the genetic heterogeneity between metastases from different patients is substantial. In a whole-exome-sequencing analysis of metastatic prostate tumours from patients with prostate cancer, researchers used whole-exome sequencing, comparative genomic hybridization and mRNA-transcript profiling to demonstrate that the number of somatic mutations, the burden of genomic copy-number alterations, and aberrations in known oncogenic drivers remained highly concordant. Collectively, these data indicate that genetic analysis of one, or a few metastases generally does reflect the full spectrum of genetic diversity among different metastases in patients with metastatic prostate cancer.

ORIGINAL ARTICLE Kumar, A. *et al.* Substantial interindividual and limited intraindividual genomic diversity among tumors from men with metastatic prostate cancer. *Nat. Med.* http://dx.doi.org/10.1038/nm.4053 (2016)

CNS CANCER

Distinct subtypes of ATRTs observed

Atypical teratoid/rhabdoid tumours (ATRTs) are among the most-common brain tumours in infants. The prognosis of these patients is predominantly poor, with some exceptions, suggesting the presence of clinically relevant intertumour heterogeneity. Following genetic analysis of 192 ATRTs, researchers were able to assign these tumours to one of three subgroups with largely homogeneous genomes: ATRT-TYR, ATRT-SHH and ATRT-MYC. However, analysis of genome-wide methylation patterns revealed substantial DNA hypermethylation among the ATRT-TYR and ATRT-SHH subtypes, but not the ATRT-MYC subgroup, which is likely to have functional consequences for the expression of tumour suppressors, or oncogenes. Thus, epigenetic analyses might guide the optimal treatment of patients with ATRTs.

ORIGINAL ARTICLE Johann, P. D. *et al.* Atypical teratoid/rhabdoid tumors are comprised of three epigenetic subgroups with distinct enhancer landscapes. *Cancer Cell* http://dx.doi.org/10.1016/j.ccell.2016.02.001 (2016)