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IN BRIEF

PROSTATE CANCER

Changes in the pattern of metastasis

The past decade has seen a notable change in the pattern of metastasis in men with metastatic castration-resistant prostate cancer (mCRPC), according to data from 270 phase II and 20 phase III therapeutic studies, involving 19,110 men with mCRPC. From 1990 to 2012, rates of nonosseous metastasis and lymph node metastasis increased by 1.6% and 1.4% per year, respectively, whereas the rate of osseous metastasis decreased by 0.5% per year and the rate of liver and lung metastasis remained relatively stable.

Original article Doctor, S. M. *et al.* Is prostate cancer changing? Evolving patterns of metastatic castration-resistant prostate cancer. *Cancer* doi:10.1002/cncr.28494

BLADDER CANCER

Distinct progenitor cells for MI and NMI bladder tumours

To establish whether non-muscle-invasive (NMI) and muscle-invasive (MI) tumours arise from a distinct or common progenitor cell, Dancik *et al.* developed a novel statistical framework that predicts cell-of-origin (COO) score as a function of known genetic alterations (*TP53*, *HRAS*, *KDM6A*, and *FGFR3*) that drive either MI or NMI bladder cancer, and compared this to the observed COO score of the tumour. Analysis of data from 874 patients established the distinct progenitor cell model as the best fit to the available data.

Original article Dancik, G. M. *et al.* A cell of origin gene signature indicates human bladder cancer has distinct cellular progenitors. *Stem Cells* doi:10.1002/stem.1625

PROSTATE CANCER

Enzalutamide effective as third-line therapy

Enzalutamide has modest clinical activity in men with metastatic castration-resistant prostate cancer (mCRPC) who have previously received docetaxel and abiraterone acetate, according to the largest study of this therapeutic approach to date. Of 69 patients, 21% experienced a maximum PSA decline of $\geq 50\%$, and enzalutamide was generally well tolerated in this cohort. PSA response to docetaxel and abiraterone did not predict PSA response to enzalutamide.

Original article Badrising, S. *et al.* Clinical activity and tolerability of enzalutamide (MDV3100) in patients with metastatic, castration-resistant prostate cancer who progress after docetaxel and abiraterone treatment. *Cancer* doi:10.1002/cncr.28518

PROSTATE CANCER

Whole-exome sequencing of bone metastasis biopsy

Researchers have successfully performed whole-exome sequencing of a bone metastasis from a man with metastatic castration-resistant prostate cancer, identifying somatic genomic alterations that dysregulate the phosphoinositide 3-kinase pathway and a germline variant in the *BRCA2* gene, and demonstrating the feasibility of diagnostic bone metastases profiling and analysis.

Original article Van Allen, E. M. *et al.* Successful whole-exome sequencing from a prostate cancer bone metastasis biopsy. *Prostate Cancer Prostatic Dis.* doi:10.1038/pcan.2013.37