Nature Reviews Urology | Published online 25 Oct 2016

IN BRIEF

PROSTATE CANCER

Proteomic assay predicts biochemical recurrence

Predictions of biochemical recurrence following radical prostatectomy (RP) are currently ineffective. Now, researchers have developed an assay enabling the post-RP stratification of men with prostate cancer into three risk categories: low, intermediate, or high, based on proteomic analysis of RP specimens. Prognosis by assay score was found to be superior to all other preoperative parameters in predicting recurrence, and provided an additional improvement in risk stratification when combined with National Comprehensive Cancer Network staging score.

ORIGINAL ARTICLE Saad, F. *et al.* Biopsy-based proteomic assay predicts risk of biochemical recurrence after radical prostatectomy. *J. Urol.* http://dx.doi.org/10.1016/j.juro.2016.09.116 (2016)

URINARY INCONTINENCE

Interneuron precursors restore bladder function

Spinal cord injury (SCI) frequently leads to long-term loss of control of bladder function and urinary incontinence. Now, researchers have partially reversed these effects in a mouse model of SCI. Human embryonic stem cells derived from the medial ganglionic eminence were transplanted into the spinal cords of injured mice. These cells were shown to differentiate into functional γ-aminobutyric-acid-containing neurons. Significant improvements in several urodynamic parameters were observed in stem-cell-injected mice, including in urine-spot diameter, intermicturition interval, voiding pressure, frequency of nonvoiding contractions and voiding efficiency relative to vehicle-treated mice.

ORIGINAL ARTICLE Fandel, T. M. *et al.* Transplanted human stem cell-derived interneuron precursors mitigate mouse bladder dysfunction and central neuropathic pain after spinal cord injury. *Cell Stem Cell* **19**, 544–557 (2016)

TRANSPLANTATION

Ex vivo model of penile transplantation developed

Following the introduction of penile transplantation, important questions remain regarding the effects of transplant rejection on cavernous tissue function. Now, researchers have developed an *ex vivo* model of penile transplantation and rejection: tissue samples from patients undergoing penile prosthesis operations were maintained in culture with autologous peripheral blood mononuclear cells (PBMCs). Activation of allogenic PBMCs was used as a surrogate marker of rejection, and could be inhibited by various immunosuppressive agents, potentially enabling the optimal immunosuppression strategy to be identified.

ORIGINAL ARTICLE Sopko, N. A. *et al.* Ex vivo model of human penile transplantation and rejection: implications for erectile tissue physiology. *Eur. Urol.* http://dx.doi.org/10.1016/j.eururo.2016.07.006 (2016)

PROSTATE CANCER

N-Myc expression drives neuroendocrine disease

Neuroendocrine prostate cancer (NEPC) is commonly associated with aggressive clinical features and poor overall survival. Now, an integrated analysis of data from prostate cancer transcriptomics and genetically modified mouse models reveals that overexpression of the *N-Myc* proto-oncogene leads to the development of prostate cancer with a phenotype similar to that of NEPC. Researchers also demonstrated that *N-Myc* expression abrogates androgen sensitivity, a hallmark of NEPC; however, cellular models of *N-Myc* overexpression were also sensitized to aurora kinase A inhibition with MLN8237.

ORIGINAL ARTICLE Dardenne, E. *et al.* N-Myc induces an EZH2-mediated transcriptional program driving neuroendocrine prostate cancer. *Cancer Cell* **30**, 563–577 (2016)