➡ PROSTATE CANCER

Nucleotyping predicts recurrence post-RP

Radical prostatectomy (RP) is a widely used treatment approach in patients with high-risk, localized prostate cancer; however, some, but by no means all, patients' cancer can recur post-RP, thus, knowledge of the risk of recurrence has important implications for the use of adjuvant therapies. Now, newly published research shows that nucleotyping, a method of determining the extent of chromatin dysregulation in post-RP specimens using DNA texture analysis, provides an accurate means of assessing individual patient's risks of post-RP recurrence, particularly when combined with more traditional approaches.

Researchers analysed formalin-fixed, paraffin-embedded tumour specimens from a consecutive series of 317 patients undergoing RP at the Norwegian Radium Hospital between 1987 and 2005. Nucleotyping was conducted on epithelial cell nuclei isolated from these specimens and a profile of recurrence-associated features was generated from the 'learning' patient dataset. Classifying cells using nuclear texture analysis near the periphery of the smallest cell nuclei resulted in a sensitivity of 73%, specificity of 66% and correct classification of 68% of samples when this approach was then tested in the validation group. However, when incorporated with Cancer of the Prostate Risk Assessment Postsurgical (CAPRA-S) score (which takes into account, among others, serum PSA levels and tumour Gleason score) into a post-RP recurrence-risk algorithm designed to stratify patients into high, medium and low recurrence-risk groups, the inclusion of nucleotyping-based stratification resulted in a statistically significant improvement in the identification of post-RP recurrence risk compared with previously available measures.

These data indicate that the addition of nucleotyping to existing recurrence-risk stratification enables significantly improved risk stratification post-RP; further investigation in a clinical trial is warranted.

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ORIGINAL ARTICLE Hveem, T. S. *et al.* Chromatin changes predict recurrence after radical prostatectomy. *Brit J. Cancer*, http://dx.doi.org/ 10.1038/bjc.2016.96 (2016)