Genetic testing may be used to identify BPH patients with increased risk of prostate cancer

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Patients with benign prostatic hyperplasia (BPH) carrying prostate cancer (PCa) a risk alleles are a potential target population for PCa screening and follow-up, according to a study, which was presented yesterday at the 28th Annual EAU Congress in Milan.

The study aimed to evaluate the genetic predisposition of patients with BPH to developing prostate cancer, with findings suggesting that genetic testing may offer a new tool to identify BPH patients with increased risk to develop PrCa.

"To our knowledge this is the first study to evaluate genetic predisposition in BPH patients developing PrCa," write the authors.

Benign prostatic hyperplasia and prostate cancer are common diseases affecting the prostate gland in aging men. Although BPH often explains the increase of PSA, the patients with elevated PSA often develop prostate cancer in follow-up after initial benign histology in prostate biopsy.

The researchers were looking to find new potential tools which would help to identify patients with elevated PCa risk among those who undergo biopsy due to rCa suspicion but have histologically confirmed BPH and no PCa in baseline biopsy.

We investigated whether the single nucleotide polymorphisms (SNP) previously found to be associated to genetic predisposition to PCa could also be used for evaluation of PCa risk in BPH patients.

In the course of the study 262 patients diagnosed with histologically confirmed BPH and 254 patients originally diagnosed with BPH and later developing PCa were analysed. These patients were originally examined due to elevated PSA or abnormal digital rectal examination and underwent prostate biopsy confirming BPH in Tampere University Hospital, Findland, between 1995 and 2004.

The follow-up time was from 7 to 16 years. The patients diagnosed with PCa within one year after original diagnosis of BPH were not included. The PCa diagnoses were confirmed from the patient records and from the Finnish Cancer Registry and 100 single nucleotide polymorfism (SNP) markers previously linked to the PCa risk were genotyped.

BPH patients carrying this mutation had 4.6 times higher risk of developing PCa compared to non-carriers (OR 4.56, CI 95% 1.29 - 16.11, p=0,0098). The average PSA levels at baseline biopsy in BPH and PCa groups were 7.3 µg/l (range 0.5-44 µg/l) and 8.0 µg/l (range 2.1 – 75 µg/l) respectively.

Provided by European Association of Urology

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