عنوان مقاله:

The predictive role of toll-like receptor-4 genetic polymorphisms in susceptibility to and prognosis of prostatic hyperplasia

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خلاصه مقاله:

Objective(s): This study was aimed to evaluate whether single nucleotide polymorphisms (SNPs) of TLR4 and common living habits of prostate hyperplasia (BPH) patients would affect the subjects' risk and prognosis.Materials and Methods: We totally recruited 501 BPH patients and 964 healthy controls. The patients' international prostate symptom score (IPSS) and quality of life assessment (QoL) were designated as the prognostic indexes for BPH patients. Altogether 7 SNPs within TLR4 were selected, and the interactions among SNPs and living habits were explained with multi-factor dimensionality reduction (MDR) modeling. Results: The mutant alleles of rs10983755 (G> A) and rs1927907 (G> A) tended to put on risk of BPH, yet the wide alleles of rs4986791 (C> T) and rs115336889 (G> C) were associated with incremental susceptibility to BPH (P<0.05). The rs10983755 (GA) and rs1927907 (GA) were suggested as the marker of non-aggressive BPH, whereas rs4986791 (TT) could symbolize aggressive BPH (P<0.05). The homozygotes of rs4986791 (TT) and rs115336889 (CC) could improve the IPSS change, and rs115336889 (CC) was also correlated with more obviously ameliorated QoL change (P<0.05). Finally, MDR modeling suggested that rs4986791 (TT) and rs115336889 (GG) shaped the genotyping combination featured by the lowest risk of BPH when smoking or drinking history was also evaluated.Conclusion: The SNPs situated within TLR4 were potent candidates for predicting risk and prognosis of BPH patients, and their interactions within environmental parameters also helped to develop effective strategies for preventing and treating BPH.

کلمات کلیدی:

Prostatic hyperplasia, Toll-like receptor 4, Genetic variation, Risk, Prognosis, MDR model

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