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Association of genetic and non-genetic risk factors with the development of prostate cancer in Malaysian men

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There is growing global interest to stratify men into different levels of risk to developing prostate cancer, thus it is important to identify common genetic variants that confer the risk. Although many studies have identified more than a dozen common genetic variants which are highly associated with prostate cancer, none have been done in Malaysian population. To determine the association of such variants in Malaysian men with prostate cancer, we evaluated a panel of 768 SNPs found previously associated with various cancers which also included the prostate specific SNPs in a population based case control study (51 case subjects with prostate cancer and 51 control subjects) in Malaysian men of Malay, Chinese and Indian ethnicity. We identified 21 SNPs significantly associated with prostate cancer. Among these, 12 SNPs were strongly associated with increased risk of prostate cancer while remaining nine SNPs were associated with reduced risk. However, data analysis based on ethnic stratification led to only five SNPs in Malays and 3 SNPs in Chinese which remained significant. This could be due to small sample size in each ethnic group. Significant non-genetic risk factors were also identified for their association with prostate cancer.

Our study is the first to investigate the involvement of multiple variants towards susceptibility for PC in Malaysian men using genotyping approach. Identified SNPs and non-genetic risk factors have a significant association with prostate cancer.

Biography

Livy Alex Shivraj is the Head of Molecular Research and Services laboratory, INFO valley Life Sciences SdnBhd, at Kuala Lumpur Malaysia. She holds a Ph.D. in Microbiology from Osmania University, Hyderabad, India and MBA in corporate finance and international business from Cardiff University, London School of Commerce, UK. Her main research interests are personalized genomics, genotyping and gene expression. She began her career with work on recombinant technology using yeasts and pichia as vectors followed by molecular diagnostics which is her current core strength now. She has published many papers in peer reviewed journals on SNPs associated with various cancers and her interests lie in exploiting these SNPs for cancer risk prediction. Her main research interest is to find out how these genetic markers differ in different populations and how they affect the disease development. Another area of her interest is hypercholesterolemia, where she has been actively researching on LDLR, APO-B and PCSK-9 mutations in the Malaysian population. She has been instrumental in developing software for risk scoring algorithms at INFOVALLEY.

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