SINGLE NUCLEOTIDE POLYMORPHISM (SNP) IN CYP17A1 (rs743572) GENE AS A RISK OF PROSTATE CANCER DEVELOPMENT – A PRELIMINARY REPORT IN CAUCASIAN GROUP.

Introduction

This study aims to sequence the established regions of CYP17A1 (rs743572) from Caucasians and to compare them with imported DNA from Malaysian Chinese group to investigate presence of ethnic-group specific single nucleotide polymorphism (SNP). This research will generate initial data for future clinical studies for development of biomarkers in ethnic-based prostate cancer screening.

Material and Method

Blood sample obtained from newly diagnosed and biopsy confirmed prostate cancer patients from Caucasian men. Controls are confirmed Benign Prostatic Hyperplasia patients with normal digital rectal examination, with a PSA of < 4.0ng/ml and with no family history of prostate cancer. Genetic polymorphisms were investigated by isolation of genomic DNA from whole blood and subsequent PCR amplification and DNA sequencing. Sequencing result aligned with reference gene using software (Geneious) to identify SNPs and anomalies in the translated protein.

Results

A preliminary result for 40 prostate cancer and 25 control patients among the Caucasians showed polymorphic T to C substitution in the 5'-untranslated region of the CYP17A1 (rs743572) gene in 50% (n=20) and 36% (n=9) respectively. The mean age of participants in both groups was 66 years. The median PSA was 6.7 and 2.1 ng/ml respectively. This polymorphism was seen mainly in cancer cases with Gleason grade ≥7 (n=15) (75%).

Discussion

As this is a preliminary report of an ongoing project, the statistical significance of the above finding has not been evaluated. Analysis of further samples in Caucasians and imported Malaysian samples using similar protocol will provide further evidence in testing the hypothesis.