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DNA MARKERS FOR NON-DIABETIC END STAGE KIDNEY DISEASE IN THE NORTH CENTRAL PROVINCE, SRI LANKA: A PILOT STUDY

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Non-Diabetic Chronic Kidney Disease (NDCKD) is a devastating disease in the North Central Province of Sri Lanka. Currently the condition is fatal within a few years of diagnosis unless transplanted amidst meager resources. Providing palliative care with haemodialysis and mitigation therapy prolongs life for a few more years but has proved enormously costly consuming 4.6% of the annual healthcare budget. This is a huge burden to the Sri Lankan economy.

In recent times, genome wide association studies have shown genetic loci underlying End Stage Kidney Disease (ESKD) in African Americans. Since then, DNA markers have been developed linked to ESKD. We tested these DNA markers amongst NDCKD patients and healthy people in Sri Lanka to identify the people at high-risk for NDCKD.

Venous blood samples were collected from 100 patients with medical records obtained via the Epidemiology Unit, North Central Province and 10 control blood samples from volunteering healthy people following informed consent. Blood samples from 10 NDCKD patients and from 10 healthy people were used to screen the DNA markers. DNA was extracted from leucocytes of collected blood by using the QIAamp DNA purification system. PCR was carried out for 10 markers with genomic DNA as the template and the primer annealing temperature was 55 °C. PCR products were size separated by using 1% agarose gel electrophoresis. The presence or absence of bands for each patient and healthy persons was recorded.

Seven out of ten markers gave successful amplification in PCR. Except one allele, all the other alleles detected for seven DNA markers showed various degrees of polymorphisms. These polymorphic bands provide a platform to analyze the pedigrees of families where NDCKD is prevalent.