

Association of bsmI polymorphisms in the vitamin d receptor gene among Indonesian population with diabetic kidney disease

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Abstrak

Background: Diabetic kidney disease (DKD), as a common cause of end-stage renal disease (ESRD), is a chronic complication of diabetes mellitus (DM). It has been established that vitamin D deficiency is one of DKD risk factors, which may be related to vitamin D receptor (VDR) polymorphisms. This study aimed to analyze the association between VDR polymorphisms and DKD in Indonesian population, also risk factors that influence it. Methods: a cross-sectional study was conducted in Type 2 DM patients who visited internal medicine outpatient clinic at Dr. Cipto Mangunkusumo Hospital, Jakarta, from November 2014 until March 2015. Data collection includes characteristics of subjects and laboratory examination, including BsmI polymorphisms in the vitamin D receptor gene. Patients with acute and severe disease were excluded from the study. Bivariate and multivariate analyses were done. Results: of 93 DM subjects, 42 (45.2%) subjects were without DKD and 51 (54.8%) subjects had DKD. Most of the subjects had the Bb genotype (89.2%), with no subject having the BB genotype. The proportions of the B and b alleles were 44.6% and 55.4%, respectively. There is no association between BsmI polymorphisms in the vitamin D receptor gene and DKD (OR = 1.243; CI 95% 0.334-4.621; p value = 0.751). Conclusion: the profile of BsmI polymorphisms in the vitamin D receptor gene in the Indonesian population were genotypes Bb (89.2%) and bb (10.8%). There was no association between BsmI polymorphisms in the vitamin D receptor gene and DKD. Duration of DM more than five years influenced the association between those variables.