Association between A1166C polymorphism of the angiotensin II type-1 receptor gene and Type-2 diabetic nephropathy in an indonesian malay population / Zulkhair Ali, Ida Kusrini, Alwi Shahab, Irsan Saleh

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Abstrak

ABSTRAK
Background: diabetic nephropathy (DN) is the leading cause of blood dialysis worldwide and a major etiology of End-Stage Renal Disease cases in Indonesia. Previous studies showed a relevant link between A1166C polymorphism of Angiotensin II Type-1 Receptor (AT1R) gene and glomerular hyper-filtration as a part of pathogenesis of DN. The aim of this study was to elaborate the association between A1166C AT1R polymorphism and susceptibility of individual with type-2 diabetes to DN in Malay Indonesian population. Methods: a case-control study of 120 consecutive patients with type-2 diabetes mellitus (40 patients in each groups for macro-albuminuria, micro-albuminuria, and normo-albuminuria) was conducted for A1166C AT1R gene polymorphism. The A1166C polymorphism of the AT1R gene was determined based on PCR/RFLP. Results: the mutant C allele was found in 5%, 13.75%, and 12.5% in normo-, micro-, and macro-albuminuria patients respectively. The heterozygote AC genotype was found significantly higher in micro-albuminuria, compared to normo-albuminuria group. Heterozygote AC genotype (OR 3.2 [1.01-10.08], p=0.03) and C allele (OR 2.8[0.95-8.67], p=0.038) were significantly higher in DN, indicating A1166C AT1R gene polymorphism as a risk factor for DN in Malay Indonesian population with type-2 diabetes. Conclusion: there was positive association between A1166C AT1R polymorphism and susceptibility of type-2 diabetics to DN in Malay Indonesian Population. It also indicated that the A1166C AT1R polymorphism could play a role in early pathogenesis of DN.