Diabetic Nephropathy (DN) is one of the microvascular complications of diabetes and the leading cause of End Stage Renal Disease (ESRD). The development and progression of nephropathy is strongly determined by genetic factors and few genes have been shown to contribute to DN. An insertion/deletion (I/D) polymorphism of the gene encoding Angiotensin Converting Enzyme (ACE) is reported to be a candidate gene predisposing to DN and ESRD. Accordingly, we investigated the frequency of ACE I/D polymorphism in 50 DN and 33 ESRD patients in comparison with 64 patients with Type 2 Diabetes Mellitus (T2DM) with normal renal function. PCR amplification using specific primers was done to genotype ACE I/D. Chi square test were used for association studies to assess the differences between the groups. The frequencies of the ACE genotypes of DN patients were as follows: 48% DD, 40% ID and 12% II compared to 32.8% DD, 45.3% ID and 21.9% II in T2DM. Although the frequency of the DD genotype was higher in nephropathy than in diabetes, it did not reach statistical significance (P =0.184).

However, there was a significant difference in the DD genotype of ESRD (60.6%) as compared to T2DM (32.8%). Furthermore, the presence of the DD genotype increased the risk of ESRD 4.44-fold compared to II genotype. These findings indicate that the DD genotype can be considered as a risk factor for the progression of DN to ESRD but not for the development of DN in T2DM Lebanese population.