Abstract:
Ambiguous results exist on fetuin-A as marker for vascular disease in type 2 diabetes. This study aims to define the role of fetuin-A as marker for micro- and macrovascular disease in a high risk population of patients with type 2 diabetes mellitus and early diabetic nephropathy. Fetuin-A serum levels were assessed by ELISA in a cross-sectional setting in 153 patients with type 2 diabetes. Associations of fetuin-A with metabolic, inflammatory and vascular markers were studied. Atherosclerotic burden was assessed by ankle-brachial-index (ABI) as well as detection of common carotid artery intima-media thickness (IMT). Levels of fetuin-A were lower in male than in female patients (0.49 ± 0.15 vs. 0.56 ± 0.20 g/L, p = 0.02). In addition, there was an inverse correlation with age (r = -0.20, P = 0.01). Bivariate correlations adjusted for age and gender revealed no significant correlations with metabolic parameters, except for a weak inverse correlation with serum adiponectin (r = -0.19, p = 0.02). Regarding parameters of micro- and macrovascular disease, fetuin-A was significantly associated with ABI (r = 0.18, p = 0.04), while there was no association with IMT (r = -0.07, p = n.s.). Patients with an ABI 1.3 (0.43 ± 0.10 vs. 0.52 ± 0.17 vs. 0.54 ± 0.18 g/L p = 0.05). Neither GFR nor albuminuria were associated with fetuin-A serum levels. Patients with
prevalent neuropathy did not have altered fetuin-A levels compared to diabetic controls. In step-wise logistic regression analysis including age, gender, HbA1c, total cholesterol, glomerular filtration rate and fetuin-A, only total cholesterol (β = 0.01, p = 0.02) and fetuin-A (β = -5.99, p = 0.03) proved to be independent predictors of an ABI< 0.9. The results of this cross-sectional study suggest that lower fetuin-A levels are associated with macrovascular late complications in high-risk type 2 diabetes patients while there are no associations of fetuin-A with metabolic status or microvascular complications.