Objective: Serum β2-microglobulin (β2M) level is elevated in renal failure and suggested a surrogate marker of cardiovascular mortality for patients with chronic kidney disease. However, the relation between serum β2M levels and subclinical atherosclerosis in type 2 diabetes mellitus without renal impairment has not been investigated yet. Methods: A total of 366 type 2 diabetic patients without renal impairment (estimated GFR 60 min/ml/1.73m²) were consecutively enrolled in this study. Serum β2M levels were measured using solid-phase, two-site chemiluminescent immunometric assay. Arterial stiffness was assessed using brachial-ankle pulse wave velocity (baPWV). Carotid artery intima-media thickness (C-IMT) was also measured. Subclinical atherosclerosis was defined as either an abnormally increased C-IMT(0.9mm) or the presence of carotid plaque. Results: Mean age and BMI of our study population were 56 ± 14 years (mean±SD) and 24.8± 3.5 kg/m², respectively. Their average HbA1c and the duration of diabetes were 9.6 ± 2.2 % and 11 ± 8.9 years. Median serum β2M levels was 1.8 mg/L. Patients with high β2M (higher than median) levels showed older age, longer duration of diabetes, higher homocysteine, higher baPWV and C-IMT compared to the patients with low β2M (lower than median). Serum β2M levels was positively correlated with baPWV (r=0.362, p<0.0001) and C-IMT(r=0.205, p=0.0001). Furthermore, serum β2M levels was an independent risk factor for subclinical atherosclerosis (OR=1.854, 95% CI; 1.005-3.419) after adjustment. Conclusion: Serum β2M levels is an independently significant risk factor for subclinical atherosclerosis in the type 2 diabetic patients without renal impairment.