Background/aim: To evaluate the effects of periodontal treatment on serum lipoprotein-associated phospholipase A2 (Lp-PLA2) and C-reactive protein (CRP) levels in hyperlipidaemic patients with periodontitis. Materials and methods: The study included 52 hyperlipidaemics and 28 systemically healthy controls (C) with periodontitis. Of the 52 hyperlipidaemics, 29 received a suggested diet (HD), and 23 of them were prescribed statin (HS). Clinical periodontal parameters, serum lipids, Lp-PLA2, and CRP levels were assessed at the baseline and 2 months after the completion of the nonsurgical periodontal treatment (2MPT). Serum parameters were also evaluated 1 week following the periodontal treatment (1WPT). Results: At the baseline, patients in the HS group had a higher percentage of bleeding on probing than those in the C and HD groups. Hyperlipidaemics had higher serum triglyceride levels than the control group at 2MPT compared to the baseline. At 2MPT, the levels of Lp-PLA2 in the HS group were significantly higher compared to the baseline and 1WPT. There were no statistically significant differences in CRP levels between study periods for all groups. Conclusion: The periodontal treatment may affect the inflammatory control of hyperlipidaemic patients with periodontitis via increased Lp-PLA2 levels and severity of the impaired lipid metabolism. These findings may be important regarding the therapeutic strategies for hyperlipidaemics with periodontitis.