**Objective** To investigate the association of blood serum asymmetric dimethylarginine (ADMA) concentration and atherosclerosis, and to determine whether ADMA can be seen as a predictor of early atherosclerosis.

**Methods** A total of 36 patients diagnosed as acute coronary syndrome (ACS) who were hospitalised in cardiovascular care unit and cardiology ward in China-Japan Friendship Hospital from June 2009 to March 2010 were randomly recruited as ACS group. Over the same period, a total of 30 patients with metabolic syndrome (MS) were randomly recruited as MS group and 30 young volunteers without any cardiovascular risk factors belonged to control group. The data of blood serum asymmetric dimethylarginine, blood serum high-sensitivity C-reactive protein (hs-CRP) and blood lipid of each patient were collected.

**Results** The concentration of blood serum ADMA in ACS group and MS group was higher than in control group (68.44±15.23 ng/ml, 69.16±14.73 ng/ml and 27.42±8.13 ng/ml, p<0.05), whereas no differences were found in ACS group and MS group (p>0.05). The Pearson correlation analysis revealed that the ADMA positively correlated with the hs-CRP (r=0.343, p<0.05) and LDL-C (r=0.374, p<0.05).

**Conclusions** High ADMA concentration may be a risk factor in atherosclerosis, but it can not be seen as a predictor of early atherosclerosis.