Objective To investigate the relationship between morning blood pressure surge and cardiovascular risk factors in primary hypertensive patients.

Methods According to the results of 24 h ambulatory blood pressure monitoring, 322 patients were classified as the morning BP surge group (MBPS group, n=149) and non-surge group (NMBPS group, n=173). Blood lipid and fasting blood glucose were recorded.

Results Age, FBG, 24 h SBP, nSBP, dSBP, 24 h PP, dPP, nPP, 24 h MAP, dMAP, nMAP were higher in MBPS group than those in NMBPS group (p<0.01 or p<0.05). Pearson relation analysis showed that morning blood pressure level positively correlated with age (r=0.446, p<0.001), 24 h SBP (r=0.347, p<0.001), FBG (r=0.368, p<0.001), nSBP (r=0.166, p=0.043), dSBP (r=0.190, p=0.02), LDL C (r=0.244, p<0.01), TC (r=0.188, p=0.022); after adjusting other risk factors, multiple regression analysis showed age, 24 h SBP and FBG remained as predisposing risk factors for MBPS level.

Conclusion Age, 24 h SBP and FBG are the important influencing factors of morning blood pressure surge.