# Comparison of the effects of bisoprorol and atenorol on post-infarct cardiac remodeling.

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[**Objective**] Myocardial infarction and following heart failure are major causes of death in Western countries and Japan. Beta blockers are usually used in the treatment of patients with heart failure. However, all beta blockers do not show similar beneficial effects on heart failure. We examined whether bisoprorol in comparison with atenorol provides beneficial effects on post-infarct LV remodeling in rats. [**Methods and Results**] Male SD rats were subjected to left coronary artery occlusion (MI group). Bisoprorol (MI+Biso group) or atenorol (MI+Ate group) was initiated one week after operation and lasted 4 weeks. Reduction of heart rate was similar in both beta blocker-treated groups. Five weeks after MI, MI+Biso group, but not MI+Ate group, exhibited significant attenuation of LV dilatation, LV fractional shortening impairment, and LV end-diastolic pressure elevation rather than MI group. Histological analysis showed that bisoprorol attenuated myocyte hypertrophy and interstitial fibrosis in non-infarct myocardium. In addition, MI-induced increase in malondealdehyde content, an indicator of oxidative stress, was attenuated by bisoprorol in non-infarct myocardium. Furthermore, we measured autonomic nervous system activity using heart rate vulnerability. Parasympathetic nervous system activity was higher in MI+Biso group rather than MI group and MI +Ate group. [**Conclusion**] These results suggest that bisoprorol attenuates oxidative stress and mediates automonic nervous system activity, leading to attenuation of post-infarct remodeling to a greater extent than atenolol.