to 21 min. Finally, I_{Na} were recorded again in normal I_{Na} solution (simulate reperfusion).

Results (1) Ischemia effects: In ischemia group, compared with normal (0.95 ± 0.04), normalised currents (at -40 mV) of simulated ischemia were increased to peak at 3 min (1.15 ± 0.08 , $p < 0.01$), returned at 9 min and 11 min (0.98 ± 0.12 and 0.92 ± 0.12 , $p > 0.05$, respectively), and decreased at 21 min (0.56 ± 0.13 , $p < 0.01$). At simulated ischemia for 21 min, there were no significant differences among ischemia group, reperfusion group and statin-reperfusion group. (2) Effects of atorvastatin on ischemia myocytes: in statin-ischemia group, there were no differences between normal and simulated ischemia for 3 min (0.97 ± 0.04 vs 0.92 ± 0.12 , $p > 0.05$). (3) Reperfusion effects: compared with ischemia for 21 min, normalised currents (at -40 mV) in reperfusion group were decreased at reperfusion for 3 min from 0.83 ± 0.11 to 0.57 ± 0.09 ($p < 0.05$), and decreased to 0.50 ± 0.09 at reperfusion for 9 min (compared with 3 min $p < 0.05$), while in ischemia group normalised currents were not changed again. And compared with ischemia group, normalised currents (at -40 mV) in reperfusion group were decreased at reperfusion for 3 to 9 min ($p < 0.01$). (4) Effects of atorvastatin on reperfusion myocytes: compared with ischemia for 21 min, normalised currents (at -40 mV) in statin-reperfusion group were decreased at reperfusion for 3 min from 0.92 ± 0.04 to 0.72 ± 0.05 ($p < 0.01$). And at reperfusion for 3 to 9 min, normalised currents in statin-reperfusion group were decreased compared with ischemia group, but increased compared with reperfusion group ($p < 0.01$, respectively).

Conclusions (1) The effects of simulated ischemia on I_{Na} are time dependent, while I_{Na} is transiently increased at 3 min, but decreased 21 min (2) Simulated reperfusion makes I_{Na} more decreased from ischemia condition. (3) Atorvastatin can depress increased I_{Na} at the period of early ischemia, and depress decreased I_{Na} at the time of reperfusion.

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EFFECTS OF SIMULATED ISCHEMIA-REPERFUSION AND ATORVASTATIN ON I_{Na} IN RAT LEFT VENTRICULAR MYOCYTES.

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Objective To observe time dependent effects of simulated ischemia-reperfusion on transient sodium currents (I_{Na}) in rat left ventricular myocytes, and effects of atorvastatin on I_{Na} in the condition of ischemia and reperfusion.

Methods Fifty-four Wistar rats were used for isolating left ventricular myocytes, which were randomly divided into four groups: ischemia group (normal→ischemia→ischemia), reperfusion group (normal→ischemia→reperfusion), statin-ischemia group (normal→ischemia with $5 \mu\text{mol/l}$ atorvastatin) and statin-reperfusion group (normal→ischemia→reperfusion with $5 \mu\text{mol/l}$ atorvastatin). Firstly, I_{Na} were recorded in normal I_{Na} solution (for control) by whole-cell patchclamp. Then, in simulated ischemia solution, I_{Na} were recorded from 3 min