

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 ( $0.95\pm 0.04$ ), normalised currents (at  $-40$  mV) of simulated ischemia were increased to peak at 3 min ( $1.15\pm 0.08$ ,  $p<0.01$ ), returned at 9 min and 11 min ( $0.98\pm 0.12$  and  $0.92\pm 0.12$ ,  $p>0.05$ , respectively), and decreased at 21 min ( $0.56\pm 0.13$ ,  $p<0.01$ ). 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 ( $0.97\pm 0.04$  vs  $0.92\pm 0.12$ ,  $p>0.05$ ). (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  $0.83\pm 0.11$  to  $0.57\pm 0.09$  ( $p<0.05$ ), and decreased to  $0.50\pm 0.09$  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  $0.92\pm 0.04$  to  $0.72\pm 0.05$  ( $p<0.01$ ). 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 transient increased at 3 min, but decreased 21 min (2) Simulated reperfusion make  $I_{Na}$  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