英文題目：Effect of Pravastatin on Sympathetic Reinnervation in Post-infarcted Rats

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前言： Epidemiological studies showed that men treated with statins appear to have a lower incidence of sudden death than men without statins. However, the specific factor for this remained disappointingly elusive. We assessed whether pravastatin attenuates cardiac sympathetic reinnervation after myocardial infarction through activation of ATP-sensitive potassium (K_{ATP}) channels.

材料及方法： Twenty-four hours after ligation of the anterior descending artery, male Wistar rats were randomized to either vehicle, nicorandil (a specific mitochondrial K_{ATP} channel agonist), pinacidil (a nonspecific K_{ATP} channel agonist), pravastatin, glibenclamide (a K_{ATP} channel blocker), or a combination of nicorandil and glibenclamide, pinacidil and glibenclamide or pravastatin and glibenclamide for 4 weeks.

結果： Myocardial norepinephrine levels revealed a significant elevation in vehicle-treated rats at the remote zone compared with sham-operated rats (2.54 ± 0.17 vs. 1.26 ± 0.36 μg/g protein, $P < 0.0001$), consistent with excessive sympathetic reinnervation after infarction. Immunohistochemical analysis for tyrosine hydroxylase, growth associated factor 43 and neurofilament also confirmed the change of myocardial norepinephrine. This was paralleled by a significant upregulation of tyrosine hydroxylase protein expression and mRNA in the vehicle-treated rats, which reduced after administering either nicorandil, pinacidil or pravastatin. Arrhythmic scores during programmed stimulation in the vehicle-treated rats were significantly higher than those treated with pravastatin. In contrast, the beneficial effects of pravastatin-induced were reversed by the addition of glibenclamide, implicating K_{ATP} channels as the relevant target.

結論： The sympathetic reinnervation after infarction is modulated by activation of K_{ATP} channels. Chronic use of pravastatin after infarction, resulting in attenuated sympathetic reinnervation by activation of K_{ATP} channels, may modify the arrhythomogenic response to programmed electrical stimulation.