Abstracts

**EFFECTS OF FISTULAR ONION BULB EXTRACT ON ISCHEMIA/REPERFUSION INJURY IN CARDIOMYOCYTES OF STREPTOZOTOCIN-INDUCED DIABETES MULLITUS RATS**

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**Objective** To investigate effects of fistular onion bulb extract (FOB) preventing ischemia/reperfusion (I/R) injury in cardiomyocytes of streptozotocin-induced diabetes mellitus rats.

**Methods** Diabetes rats by streptozotocin-induced were fed FOB (100 g/kg/day) from six to 14 week of age. Hearts models of I/R which randomly divided into control group, diabetes group, FOB control and diabetes groups were observed changes of heart function through using Langendorff-perfusion system. Fluorescence intensity of intracellular free Ca²⁺ was detected with Flup-3/AM loading by laser scanning confocal microscope.

**Results** In diabetes group, values of LVDP, LVEDP, (dp/dt max) and CF were all significantly decreased, and dp/dt min were increased (compared with normal control group, p<0.01, respectively). But every parameter mentioned above such as LVDP, LVEDP, dp/dt max, CF was increased, and dp/dtmin was obviously decreased in FOB diabetes group (compared with diabetes group, p<0.01, respectively). Fluorescence intensities of intracellular free Ca²⁺ were markedly stronger after influence of I/R injury (compared with normal control group, p<0.01). Current density of I_Ca,L was significantly decreased, and I–V curve was changed up to the top, as soon as the peak clamp potential was −30 mV with same I/R condition in diabetes rats. In FOB diabetes group, fluorescence intensities of intracellular free Ca²⁺ were significantly reduced in I/R injury procedure (compared with diabetes group, p<0.01). I_Ca,L was partly recovered near normal control group, and I–V curve was changed among normal control and diabetes group. When clamp voltage was −20 mV, the current densities of I_Ca,L were significantly decreased from (−3.17±2.07) pA/pF in normal control group to (−3.21±0.54) pA/pF in diabetes group (p<0.01), (−7.14±2.17) pA/pF in FOB control group (compared with normal control, p>0.05, and (−6.81±0.76) pA/pF in FOB diabetes (compared with normal group, p<0.05, and with diabetes group, p<0.01, and with FOB control group, p>0.05).

**Conclusion** Poor heart function was tightly correlate to that (Ca²⁺i) was increased and I_Ca,L was decreased with I/R injury in diabetes rat hearts. FOB- treated could significantly inhibit I/R injury induced severely cardiac performance, which was attributed to that FOB might adjust I_Ca,L influx, and normalise balance of intercellular (Ca²⁺i), as soon as blocked Ca²⁺ overload trigged by effects of Ca²⁺-induced Ca²⁺ release in diabetes cardiomyocytes.