

GW23-e2037

# THE STUDY OF THE PROTECTIVE EFFECT AND THE HSP70 EXPRESSION

doi:10.1136/heartjnl-2012-302920a.264

Liao Wei, Zeng Shixiu, Liao Wei. *The Affiliated Hospital of Gannan Medical College*

**Objectives** Investigate the protective effects and antiapoptotic of curcumin on hypoxia/reoxygenation cardiomyocyte cells. Investigate the relationship between anti-apoptotic mechanisms of curcumin and HSP70 expression.

**Methods** Primary culture the myocardial cells of 1–3 days SD neonatal rats. Integration and synchronisation beat well primary culture cells used in experiment. Measured by MTT assay curcumin side effects on myocardial cells, then calculate the IC<sub>50</sub>. Find the best intervention concentration, which has no obvious side effects on myocardial cells. Select the high, medium and low concentration used in the experiment. Counting cells and inoculated plate, grouping and curcumin intervention. Then application of a continuous spectrum multifunctional microplate reader detected in each group at each time point supernatant lactate dehydrogenase (LDH) activity and malondialdehyde (MDA) content. Use Hoechst 33342 and propidium iodide (PI) double staining the cells, then observation the cells apoptosis and necrosis by fluorescence microscope camera. Immunohistochemical method to observe the expression of HSP70 in myocardial cells in each group.

**Results** Contrast with the treatment group and the normal control, MDA content was lowest; After hypoxia, showing the highest MDA content in the I/R group. MDA content in high, medium and low concentrations of curcumin groups were increased, and with curcumin reduce the concentration of activity increased significantly. Compared with the normal control group, the difference was statistically significant, Normal control group with time, the MDA content were not significantly changed. Compared with I/R group cells, apoptosis of the groups cell with curcumin were less. Immunohistochemistry to detect the change of HSP70 in the cells in each group, Hypoxia/reoxygenation 0 h, there were almost no expression of HSP70. HSP70 expression increased, but given the curcumin group express increased than the I/R group. And amount of HSP70 expression is proportional to the concentration of curcumin amount. There were almost no expression of HSP70 in normal control group cells, and no significant change over time. Myocardial cells after hypoxia/reoxygenation injury with time, HSP70 expression was increased. Compared with I/R group cells, HSP70 expression of the groups cell with curcumin was increased. HSP70 expression is proportional to cells with curcumin concentration.

## Conclusions

1. Curcumin has protection and anti-apoptotic effects on hypoxia / reoxygenation cardiomyocyte cells in vitro, and the protective effect of curcumin concentration showing a certain dose-dependent manner.
2. With increasing curcumin concentration, the HSP70 expression in hypoxia/reoxygenation cardiomyocyte cells increase. and intracellular HSP70 expression of hypoxia / reoxygenation cardiomyocyte cells increased with time. Curcumin protective effect of hypoxia / reoxygenation cardiomyocyte cells may be associated with the increased expression of HSP70.