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EFFECT OF HUMAN UMBILICAL VEIN ENDOTHELIAL CELLS INJURY INDUCED BY ETHANOL AND ITS MECHANISM

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He Sheng-Hu, Zhang Jing, He Sheng-Hu. *Subei People's Hospital of Jiangsu Province*

Objectives To investigate the damage effect of ethanol on human umbilical vein endothelial cells (HUVEC) in vitro and its possible mechanisms.

Methods HUVEC were treated with ethanol (50 mmol/l, 100 mmol/l and 200 mmol/l) for 24 h, Cells activity was determined by methyl thiazolyl tetrazolium (MTT), malondialdehyde (MDA) was determined by thiobarbituric acid, the activity of superoxide dismutase (SOD) was determined by xanthine oxidase methods, the secretion of NO was determined by Nitrate reductase, the expression of ICAM-1 was determined by enzyme linked immunosorbent assay, and the rate of apoptosis was detected by flow cytometry (FCM).

Results High concentrations of ethanol could inhibit the Cells activity, increase the level of MDA, low the activity of SOD, inhibit the secretion of NO, increase the expression of ICAM-1, and promote the apoptosis of HUVEC in dose-dependent manner.

Conclusions Ethanol could damage endothelial cell. And its possible mechanisms include oxidative stress, inflammatory response and the promotion of apoptosis.