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论著

乙醇对胚胎发育与卵黄囊超微结构的影响

屈卫东[1]，吴德生[1]，张天宝[2]，张本忠[1]，邓 莹[1]，张 雪[1]，王云波[1]

(1. 四川大学公共卫生学院环境卫生学教研室, 四川 成都 610041；2. 第二军医大学卫生毒理学教研室, 上海 200433)

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摘要 为研究发育敏感期暴露于乙醇不同时间对胚胎发育和胚胎卵黄囊超微结构的影响. 以体外全胚胎培养和电镜技术研究0.2 g·L^{-1}乙醇不同时间作用时对胚胎发育影响及胚胎卵黄囊超微结构改变. 结果表明发育异常与乙醇作用存在时间-效应关系. 0.2 g·L^{-1} 8 h对胚胎发育和形态分化无明显影响，随时间延长除胚胎头长，体长，卵黄囊直径，蛋白质和DNA含量等主要发育指标进一步受抑制外，胚胎畸形，死亡率明显升高. 卵黄囊超微结构变化程度与染毒时间和胚胎发育状况相一致，乙醇可导致卵黄囊细胞内微绒毛和溶酶体数量减少，线粒体等部分细胞器内膜肿胀. 上述结果提示卵黄囊结构损伤和破坏在乙醇所致的发育异常中起重要作用.

关键词 醇, 乙 胚胎 卵黄囊 超微结构

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Effects on embryonic development and ultramicrostructure of visceral yolk sac induced by ethanol

QU Wei-Dong[1], WU De-Sheng[1], ZHANG Tian-Bao[2], ZHANG Ben- Zhong[1], DENG Ying[1], ZHANG Xue[1], WANG Yun-Bo[1]

(*1. Department of Environmental Health, School of Public Health, Sichuan University, Chengdu 610041, China; 2. Department of Health Toxicology, the Second Military Medical University, Shanghai 200433, China)*

Abstract

To research the effects of exposure time of ethanol in developmental critical stage on embryonic development and visceral yolk sac (VYS) of ultra-microstructure, in this study, whole embryo culture and electronic microscope technique were used to investigate changes of embryonic VYS of ultra-microstructure and embryonic development *in vitro*. The result showed that there was time-effect relationship between developmental abnormalities and exposure time of ethanol. Ethanol 0.2 g·L^{-1} has not any effect on embryonic development and morphological differentiation when they were cultured for 8 h *in vitro*. With extension of treated time, the main indexes of embryonic development including VYS diameter, head length, contents of protein and DNA were obviously inhibited, while the embryolethality and teratogenic rate were obviously increased. The change on VYS ultra-microstructure is accordant with treating time and status of embryonic development. Ethanol could result in that the number of microvilli and lysosome was decreased, inner membrane of mitochondria swelled. These results suggest that structural damage and destruction of embryonic VYS play important roles in developmental abnormalities induced by ethanol.

Key words alcohol ethyl embryo visceral yold sac ultra microstructure

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