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论著

吡咯烷二硫氨基甲酸酯对犬体外循环中红细胞的保护作用

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摘要 摘要：目的 研究犬体外循环（CPB）中吡咯烷二硫氨基甲酸酯（PDTC）对红细胞的保护作用。方法 将12只犬随机分为对照组（n=6）和PDTC组（n=6），建立CPB模型。PDTC组于CPB前静脉注射PDTC 30 mg/kg，对照组于CPB前静脉注射等量生理盐水。分别于CPB前、阻断30 min、阻断60 min、开放30 min和开放60 min时测定血浆白细胞介素 (IL) -lβ、IL-8、游离血红蛋白(F-HB)、丙二醛(MDA)、红细胞三磷酸腺苷(E-ATP)和红细胞超氧化物歧化酶（E-SOD）水平。结果 阻断后各时间点对照组的血浆IL-lβ和IL-8水平均显著高于CPB前(P＜0.01)，PDTC组开放后血浆IL-lβ和IL-8水平显著高于CPB前(P＜0.05,P＜0.01)；两组血浆MDA和F-HB水平均显著高于CPB前(P＜0.01)；两组E-ATP和E-SOD水平均显著低于CPB前(P＜0.01)。PDTC组CPB后E-ATP水平和E-SOD活性显著高于对照组(P＜0.01)，而血浆IL-lβ、IL-8、MDA含量和F-HB浓度均显著低于对照组(P＜0.01)。结论 PDTC通过减轻CPB期间脂质过氧化反应和炎性反应对红细胞起到一定的保护作用。

关键词 吡咯烷二硫氨基甲酸酯 红细胞 体外循环

分类号

Protective Effect of Pyrrolidine Dithiocarbamate on Erythrocytes during Canine Cardiopulmonary Bypass

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Abstract ABSTRACT:Objective To investigate the protective effect of pyrrolidine dithiocarbamate（PDTC）on erythrocytes during canine cardiopulmonary bypass (CPB). Methods Twelve adult healthy dogs undergoing CPB were randomly divided into the control group (n=6) and the PDTC group (n=6). In the PDTC group, PDTC 30 mg/kg was administered intravenously before CPB. Dogs in the control group was intravenously administering with normal saline. The levels of interleukin (IL)-1β, IL-8, malondiadehyde(MDA), free hemoglobin (F-HB) in plasma, erythrocyte adenosine triphosphate (E-ATP), and erythrocyte superoxide dismutase（E-SOD）were determined before CPB, 30 and 60 minutes after aortic cross-clamping (AC), and 30 and 60 minutes after declamping (DC). Results In the control group, plasma levels of IL-lβ and IL-8 significantly increased after CPB (P＜0.01). In the PDTC group, plasma levels of IL-lβ and IL-8 significantly increased after CPB (P＜0.05,P＜0.01). Plasma levels of MDA and F-HB significantly increased (P＜0.01) and the E-ATP level and E-SOD activity significantly decreased after CPB (P<0.01) in both two groups. The E-ATP level and E-SOD activity in the PDTC group at 30 and 60 minutes after AC and 30 and 60 minutes after DC were significantly higher than those in control group (P＜0.01). However, the levels of IL-lβ, IL-8, MDA, and F-HB at 30 and 60 minutes after AC and 30 and 60 minutes after DC were significantly lower in the PDTC group than those in control group (P＜0.01). Conclusion PDTC can protect erythrocytes by alleviating lipid peroxidation and inflammatory response during CPB.

Key words pyrrolidine dithiocarbamate erythrocytes cardiopulmonary bypass

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