Poster Abstracts

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PROTECTIVE EFFECT OF THE RECOMBINANT HUMAN K192 SUBTYPE OF PARAOXONASE 1 ON CHLORPYRIFOS-INDUCED ACUTE LIVER INJURY IN SD RATS

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Objective: To investigate the protective effect of recombinant human K192 subtype of paraoxonase 1 (rHuPON1K192) on acute chlor- pyrifos poisoning induced liver injury in rats.

Methods: Totally 50 healthy adult SD rats were randomly assigned into five equal groups, including normal group (group A), rHuPON1K192 control group (group B), chlorpyrifos group (group C), low dose rHuPON1K192 pretreated group (group D), and high dose rHuPON1K192 pretreated group (group E). Group C, D and E were given intragastric administration of chlorpyrifos. Group D was given rHuPON1K192 by caudal intravenous injection according to 4 500 U/kg 30 min before intragastric administration of chlorpyrifos. Group E was given rHuPON1K192 according to 9 000 U/kg. Group A received same volume of saline by intragastric administration. Group B was only given rHu- PON1K192 by caudal intravenous injection. After 8 hours, the rats were anesthetized and the blood was harvested. The activity of alanine aminotrans- ferase (ALT) and glutamic-oxalacetic transaminase (AST) was detected by rate method, and the activity of malic dehydrogenase (MDH) and gluta- mate dehydrogenase (GLDH) was determined by ELISA method. The expression of hypoxia inducible factor-1α (HIF-1α) in liver tissue was detect- ed by immunohistochemical method. The liver tissue was examined by light microscope and transmission electron microscope (TEM). Finally the differences among the groups were compared.

Results: There was no significant difference between group A and group B ($P > 0.05$). Compared with group A, the liver function indexes of ALT, AST, GLDH and MDH exhibited significant increase in group C, a higher expression of HIF-1α was also observed, and the pathological observation showed severe damage of cell membrane and mitochondrion ($P < 0.01$). The above indexes in group D and group E were slightly elevated compared with group A, the change in group E was smaller than that of group D. There was no significantdiffer- ence between the two groups ($P > 0.05$. The above indexes change in group D and group E were lighter than those in group C ($P < 0.05$).

Conclusion: rHuPON1K192 has a protective effect on liver injury induced by chlorpyrifos poisoning.

Keywords SD rat; chlorpyrifos; rHuPON1K192; liver injury