

Study on modified cold storage method of rat livers with self-made HYD solution

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Abstract

AIM: To investigate the effect of cold preservation on rat livers by modified storage method with self-made HYD solution.

METHODS: The modified method was that the vascular bed of rat livers was expended with an additional 20 mL, 30 mL and 40 mL self-made HYD solution/100 g liver. After resection of the liver, the extra HYD solution expressed as % liver weight was entrapped *via*

portal infusion by tying off the supra and infra hepatic inferior vena cava. According to the amount of extra HYD solution, 40 rats were randomly divided into four groups: control group with conventional storage method, 20% group, 30% group and 40% group. The preservation effect of modified storage method was compared with that of conventional storage method using isolated perfused rat liver model.

RESULTS: Bile production and all the indices of hepatic microcirculation including portal perfused pressure, endothelin in the effluent, Trypan blue distribution time and histology in modified method groups were significantly superior to those in control group ($P < 0.05$). The liver enzymes in 30% group were markedly lower than those in control group ($P < 0.05$). The preservative efficiency of rat liver in 30% group was the best among the modified method groups.

CONCLUSION: The cold preservative efficiency with modified storage method is obviously superior to that with conventional storage method. It is suggested that the modified cold storage method is effective and may have potential for liver preservation.

Key words: Liver; rats; Endothelin-1; Cryopreservation; Regional perfusion

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