Effect of Hu Jing formula on lowering blood fat and endothelial protection in a rat model of hyperlipidemia

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OBJECTIVE To investigate the effect on lowering blood fat and endothelial protection of Hu Jing formula, a Traditional Chinese Medicine formula compose of Hu Zhang (polygonum cuspidatum), Huang Jing (solomon's seal), Dan Shen (Salvia miltiorrhiza) and He Ye (lotus leaf). **MethodS** To apply the hyperlipidemia in rat, the rats were feed with high fat emulsion (consists of lard oil, cholesterol, yolk powder, propylthiouracil, twain-80) 2ml/100g for 4 week. From the 3rd week, Hu Jing formula (0.38, 2.5 or 7.5g/kg-1) was administrated to the rats simultaneously. After 4 weeks fed, the activity and body weight was to evaluate the changes of apparent behavior, lipid level and hemorheology were to evaluate the effect of lowering blood lipid. HE staining of thoracic aorta section was to evaluate the effect of endothelial protection. **RESULTS** The locomotor activity of the hyperlipidemia rat is decreased, the excreta is sticky and urine is yellow, while administration of Hu Jing formula (7.5g/kg-1) reversed those symptom, the rat became active and . After administration of Hu Jing formula(7.5g/kg-1), the serum TC, HDL-C, LDL-C were decreased by 15.3%, 10% and 20% ($P<0.05$), while the hemorheology were lower than the normal rats. After administration of Hu Jing formula, the endothelium of thoracic aorta was intact and smooth, and the internal elastic lamina changed to non-fracture. The thoracic aorta became elasticity and turned to mormal. **CONCLUSION** Hu Jing formula have significant effect on hyperlipidemia rat model. Hu Jing formula has reliable effect on lowering blood lipid, protect endothelial cell and sustain. Meanwhile the rat were all gained much weight, indicated the drug can alter the condition of thyroid hormone and modify the hypothyroidism, and the drug could alter the lipid level, especially TG, to lower the risk of cardiovascular diseases.