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The effects of noise on biochemical parameters using rat's hearts

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INTRODUCTION

Noise pollution is becoming increasingly pervasive especially in industrial countries. Prevalence of noise is implicated in various illness of human and it is responsible for increased morbidity associated with modern life style. There are several non-auditory physiological effects of noise exposure including hypertension, ischemic heart disease as well as disturbed serum lipid, triglycerides, platelet count, plasma viscosity, glucose and reduced motor efficiency. This study is aimed to investigate the effect of noise on plasma blood glucose concentration and lipid profile in the study groups as compared to control.

METHODS

The rats were divided into four groups and they include exposure to noise of intensity 80-100 dBA on duration of 12 hours exposure (acute effect), 8 hours daily for 20 days (chronic effect), 20 days into 3 days exposure and 2 days without 8 hours per day (intermittent effect) and the control group.

RESULTS

Plasma glucose was significantly increased in its concentration for the acute and chronic continuous groups as compared to control. The cholesterol, triglycerides (TG) and high density lipoprotein (HDL) had no significant difference compared to control in the case of acute noise exposure although there is a significant elevation in the chronic continuous group. HDL level revealed significant elevation in case of chronic continuous and intermittent noise exposure ($p<0.05$) when compared to control group.

CONCLUSION

High intensity noise may trigger the negative impact to our biochemical parameters, especially in long continuous noise exposure setting.