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Original Article

Cold Pressor Test as a Predictor of Hypertension

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Abstract:

Background: Early detection of proneness to hypertension may help an individual to lead a healthy life by altering the life style. Subjects having the predisposing factors of hypertension tend to show higher and prolonged responsiveness to blood pressure following stress.

Methods: Normotensive, non-smoking healthy sedentary male students and staff of Nepal Medical College (n=50, age group 18-35 years) participated in the study, conducted between May 2008 and June 2008. Participants with hypertensive parents, either or both, were considered volunteers from hypertensive families. The cold pressor test was carried out. The changes in blood pressure and heart rate among the volunteers of the hypertensive and normotensive families were compared using Student's t-test.

Results: In the present study, sympathetic stimulation exerted through the cold pressor test resulted in an elevation of blood pressure and heart rate in all the young male normotensive individuals. Blood pressure and heart rate returned to the baseline 5 minutes after the withdrawal of the stressor in the cases of the volunteers with no history of familial hypertension. On the other hand, the subjects whose parents, either or both, were reported to be hypertensive showed elevated diastolic blood pressure even 5 minutes after the withdrawal of the stressor.

Conclusion: The present study revealed that the normotensive young male subjects who presented prolonged elevated diastolic pressure in response to sympathetic stimulation through the cold pressor test were prone to develop hypertension in the future.

Keywords:

Hypertension · Early diagnosis · Sympathetic nervous system

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